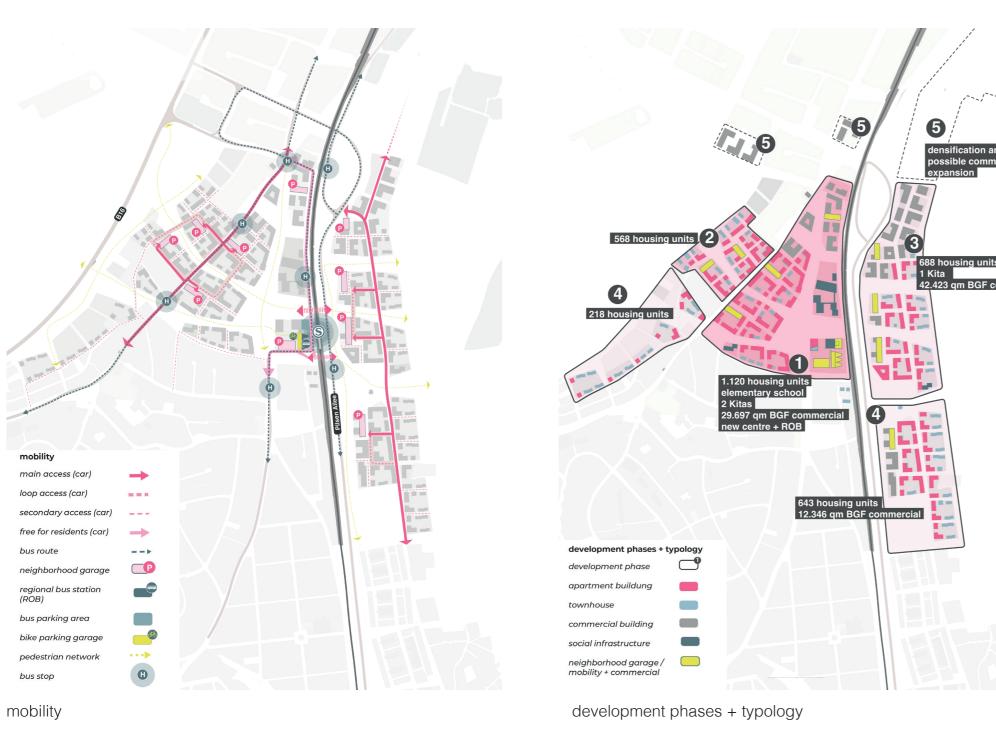
Regensburger Nordstern







Energy conceptThe new district is characterized by its cold district heating network (kaltes Nahwärmenetz), which makes it a climate-neutral showcase project for the whole of Regensburg. The district's entire electricity and heating requirements are covered by its own production and any surplus energy produced is fed into the Regensburg grid. The central elements of the self-sufficient energy system are the substation, which is connected to the local power grid, PV systems, geothermal probes, an energy center as a structural highlight and, optionally, a CHP unit (BHKW) with electrolyser if the district wants to produce its own hydrogen.

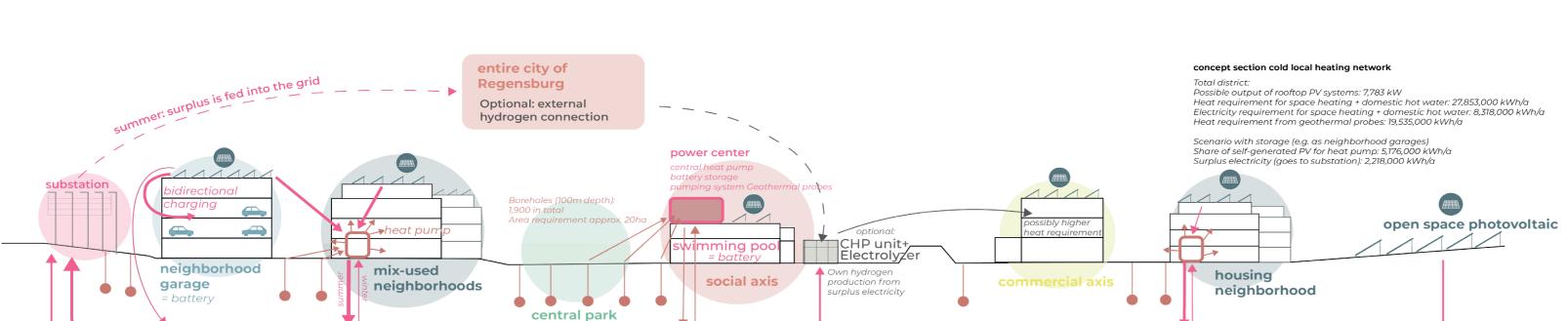
Energy production is basically based on PV electricity from PV systems on all roofs and the open space PV system in the east of the area. Each is-land forms an energy unit consisting of 4 or 6 blocks and has a neighborhood garage, which also acts as a central battery. Thanks to the principle of bidirectional charging, the solar power produced during the day is stored directly by charging the electric cars. This principle is currently being rese-arched and represents an important future technology that will be established in the next 5 years.

mal probes. The heat pumps can be used for heaconverts the surplus electricity (which is collected

mal probes will be installed in the area between Chamer Staße and Pilsen Allee and to the east of Pilsen Allee. Depending on how deep the area can be drilled, an area of approx. 20 ha (for 100 m deep boreholes) or 6.5 ha (for 300 m deep boreholes) is sufficient for geothermal probes. There should be no boreholes under the buildings to make maintenance work possible.

axis. Its location directly next to the indoor swimming pool creates useful synergies: The indoor swimming pool can be used as a central heat storage facility. In addition, the energy center has a central heat pump for the indoor pool, the elementary school and the KiTa as well as the pumping system for the geothermal probes. In this way, the topics of energy and climate protection are presented in a central location close to the citizens and can also be used for educational purpo-

The commercially used areas are also equipped with PV roofs and heat pumps. As the whole area produces more energy than it consumes, the surplus electricity can be used for an own hydrogen The surplus electricity is fed directly into the local power grid. Each block shares a heat pump that esses with higher heat requirements (e.g. a large ting in winter and cooling in summer. By sharing energy infrastructure block by block and island by island, an efficient system is created. Geother-



energy concept

local power grid

