

Cradle-to-Cradle Industrial Park

feasibility study development of an industrial park inspired by the Cradle-to-Cradle philosophy **location** Bielefeld, Germany **size** 65 ha test site **client** City of Bielefeld, Economic Development Company WEGE mbH **services** C2C principles, structural plan, prototypes for buildings and open spaces, energy system, label criteria **status** research 2014-15 **project team** Oliver Seidel, Verena Brehm **cooperation** urbane gestalt landschaftsarchitekten, transsolar KlimaEngineering, IMAGINE envelope

The concept Cradle-to-Cradle (C2C, Michael Braungart et al.) is based upon the idea of a circular economy in which resources are not consumed but are continually used. The feasibility study explores how this concept can be transferred to the development of industrial parks: C2C-principles for the design of buildings, open spaces and infrastructure are developed and a structural plan for a test site in Bielefeld, Germany, is laid out. Moreover an energy system for the whole area is designed and C2C-prototypes for buildings and open space situations. The approach of the study is holistic and interdisciplinary and its planning recommendations can be used for the development of new industrial areas as well as for the transformation of existing sites.



Energy system: combined heat and power station (CHP), wind power station, decentralized photovoltaic plants



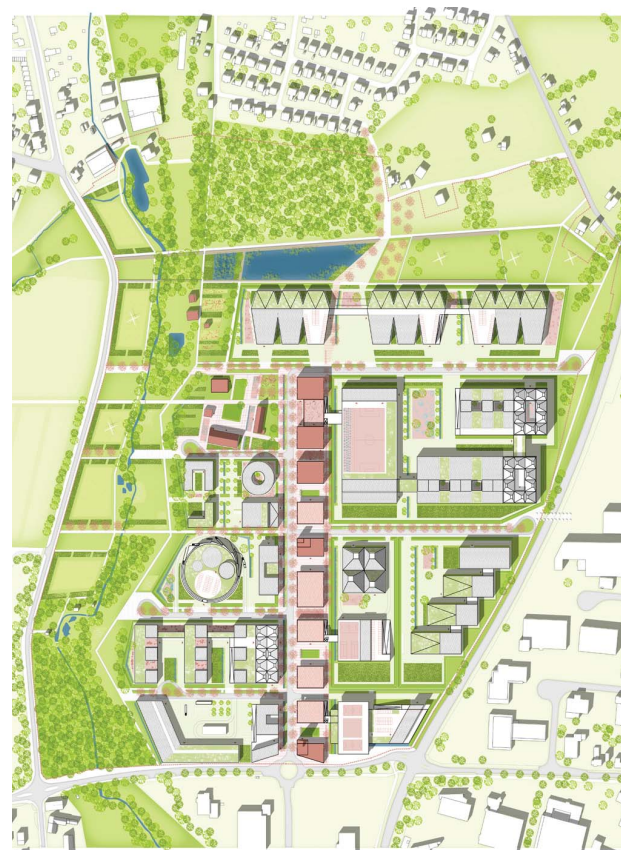
Elements of the rainwater management: green roofs, channels, wetland



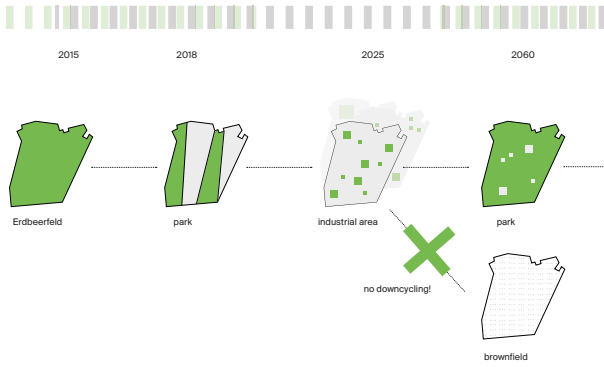
"Celebrate Diversity" - biodiversity, social and cultural diversity



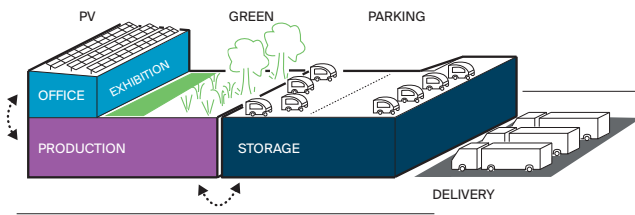
structure of the open spaces



structural plan

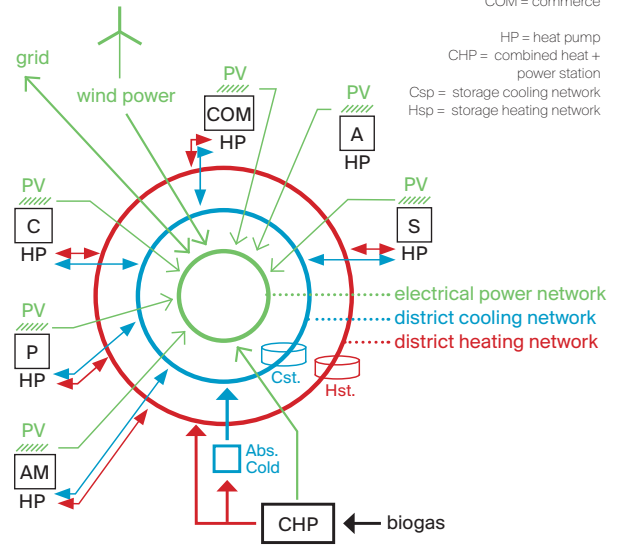


C2C-Principle A1 "The whole area is conceptualized as a cyclical system."



Building compactly:
 - Stacks instead of rows!
 - Annex instead of gaps!
 - Use rooftops! parking areas, sport fields, PV / solarthermics, intensive/ extensive green...
 (Load-bearing structure must support extensions and green roofs)

C2C-Principle C7 "Hybrids are developed and spaces are used effectively."



clusters of sectors
 P = production
 AM = automotive
 C = crafts
 S = services
 A = administration
 COM = commerce

HP = heat pump
 CHP = combined heat + power station
 Csp = storage cooling network
 Hsp = storage heating network

- renewable energies: CHP, PV, wind power
 - electrical power network, district heating and cooling networks with storage facilities and connection to the national grid
 - regulation of temperature levels via heat pumps per area
 - phasing by gradual extension of PV plants

Energy system



View from the area's entrance to the north along the central axis