



Form Follows Beam

Architecture for a Particle Accelerator

Edited by Florian Heilmeyer

Edited by Christian Holl

Designed by Johannes Hucht

Designed by Steffen Knöll

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- Documents the design and construction of the FAIR accelerator facility near Darmstadt, Germany, one of the world's most complex structures for cutting-edge research
- FAIR enables research into matter and states that do not occur naturally on Earth
- Offers insights into the work of architects and engineers on a task beyond routines and usual rules and regulations
- Highlights the relevance of architectural thinking on the example of a highly complex project largely determined by technical requirements
- Illustrates the interplay of cutting-edge research and the architecture housing it

The Facility for Antiproton and Ion Research (FAIR) near Darmstadt, Germany, has been under construction since 2012. One of the world's most complex structures for cutting-edge research, it features a ring accelerator with a circumference of 1.1 km (0.68 miles) and 14 adjoining research buildings with laboratories, workshops, cooling systems, energy supply, and a high-performance computing centre. FAIR will supply matter of unprecedented density and temperature, and accelerate particles to nearly the speed of light, enabling vital research into matter and states that do not occur naturally on Earth. The architecture of this mega-project was designed by ion42, a joint venture between German architecture firms DGI Bauwerk (Berlin) and schneider+schumacher (Frankfurt am Main).

Form Follows Beam provides deep insights into the genesis and execution of this extraordinary and spectacular architectural task, lavishly illustrated with plans, drawings and sketches, visualisations, and photographs. In conversation, architects and engineers speak about the evolution facility's shape and why careful architectural and landscape design is essential even for a facility so strongly determined by technical requirements. Supplementary essays explain how FAIR works and what is being researched in it, and what makes Darmstadt its ideal location.

Florian Heilmeyer is a Berlin-based author, editor, critic, and curator in the fields of architecture and urbanism. **Christian Holl** is an author, publicist, curator, and managing director of BDA Hessen. He also works as co-editor of German online architecture magazine *marlowes*. **Johannes Hucht** and **Steffen Knöll** are communication, type, and book designers. They both work with Studio Tillack Knöll in Stuttgart, founded in 2018 by Steffen Knöll and Sven Tillack, and joined by Johannes Hucht in 2021. Publish date 11th May 2026