

Nano Materials in Architecture, Interior Architecture and Design

Sylvia Leydecker, Birkhäuser, Basle 2008, 192 pp., ISBN 978-3-7643-7995-7, £29.90; US\$54.95; €39.90

From pharmacology and cosmetics to microelectronics and construction, nano materials and products are permeating everyday life. Nano is the hot new topic, although it is, in both senses of the word, anything but evident. In physical and chemical research, the term "nanotechnology" covers all work done on a scale smaller than 100 nanometres, in which material properties can be changed in a targeted way.

New ways to add functionality to surfaces of building shells or interiors, to change an exterior finished surface to a multifunctional layer, are of particular interest to architects and designers. Running the gamut from wall colours to window glass and frames, from roof and floor tiles to floor slabs and insulating materials, the use of nanoparticles forms a basis for innovation and makes new properties and decorative effects possible.

The book provides a look into the world of materials that have been modified on the scale of a millionth of a millimetre. The author focuses on coatings that are widely available and have already been utilized in projects. In short introductory sections, she outlines the history, ecology, economy and risks clearly and succinctly. The core of the text is presented in 17 chapters on (multi-) functional surfaces, grouped according to their properties (e.g. self- and air-cleaning, antibacterial, insulating, hard-wearing).

Here, principles and products relevant to design and construction are introduced.

The book is laid out well, and though the illustrations are small, their image quality is impressive, showing objects normally invisible to the human eye. Curious laypeople and advanced planners alike are afforded a glimpse into a brave new world that promises glowing wallpaper and ultra-thin, energy-producing coatings. It is a pity that the text confines itself to surface coatings; similarly proven developments in the area of concrete and mortar technology, for example, have been left out. A certain critical distance to this "fantastic prodigy", for all its fascinating properties, is also lacking.

Architects and designers are now called upon to integrate these functional enhancements into meaningful, energy-efficient and sustainable concepts, so that working with nanomaterials becomes more than merely a formal aesthetic exercise.

Roland Krippner