

# **The Materials Book**

**Edited by  
Ilka Ruby & Andreas Ruby**

**Ruby Press**

- 9 Introduction:  
The Matter of  
Construction: Systemic  
Overhaul or Tweaking  
the Status Quo?  
Marc\*Angelil and  
Cary Siress
- 25 22 Propositions for  
Re-materializing  
Construction  
Edited by Sarah Nichols
- 53 Propositions 23-37
- 57 Talks on Materials
- 58 Make Do  
Anne Lacaton
- 80 Sustainability Triad:  
Three Timber Buildings  
Christine Binswanger
- 99 Place - Nature -  
Energy - Recycling -  
Materiality  
Lord Norman Foster
- 121 Harvesting Materials  
in a World of Finite  
Resources  
Laila Iskandar
- 139 Changing Paradigms:  
Materials for a World  
Not Yet Built
- 142 Build More with Less:  
How to Create the  
Future without  
Destroying the World  
Werner Sobek
- 145 Cultivated Building  
Materials: The Fourth  
Industrial Revolution?  
Dirk Hebei, Felix Heisei
- 150 Mushroom Materials  
Named under the Sun  
Phil Ross
- 156 Reuse and Recycling:  
Materializing a Circular  
Construction  
Felix Heisei
- 161 Reuse Economy  
Maarten Gielen
- 169 Paradigm Shift:  
The City of 1,000 Tanks,  
Chennai  
Eva Pfannes
- 181 Shifting the Flows,  
Pulling the Strings:  
Stocks, Flows, and  
Their Dynamics
- 184 Beyond Circularity  
Marilyne Andersen,  
Guillaume Habert
- 187 How the Circular  
Economy Can Lead to  
Carbon Neutrality  
Serge Salat
- 191 Enhancing Livability  
through Resource  
Efficiency: An Urban  
Metabolism Study  
in Cairo  
Heba Allah  
Essam E. Khalil
- 198 Toward Urban  
Dematerialization:  
Governance for the  
Urban Commons  
Mark Swilling
- 201 How Much Does  
Your Building (or Its  
Corresponding  
Infrastructure) Weigh?  
Stefanie Weidner
- 206 Cities as Ecosystems  
and Buildings as Living  
Organisms  
Christoph Ktiffer

- 211 From Manual to Digital and Vice Versa: Digitization, Labor, and Construction
- 214 Imposing Challenges, Disruptive Changes: Rethinking the Floor Slab  
Philippe Block, Cristian Calvo Barentin, Francesco Ranaudo, Noelle Paulson
- 220 Pizza and Dirt in Uganda: A Student-Led Project Proves the Viability of Rammed-Earth Construction  
Achilles Ahimbisibwe
- 225 Building Climate: From Mechanical to Material  
Arno Schlueter
- 228 Designing for Natural Ventilation: Climate-Architecture - System  
Alpha Yacob Arsano
- 233 Rebuilding after Disaster: Children's Recreational Center in Juchitan, Oaxaca  
Loreta Castro Reguera
- 239 KnitCrete: Building in Concrete with a Stay-in-Place Knitted Fabric Formwork  
Mariana Popescu, Matthias Rippmann, Tom Van Mele, Philippe Block
- 245 Catch-22: Material Needs versus Material Impact
- 248 MaGIC: Marginal Gains in Construction  
John Orr
- 253 From India: Three Lessons in Sustainable Construction  
Soumen Maity
- 257 Cement and Concrete Materials Science and Engineering Education in Africa: Opportunities for Development  
Yunus Ballim
- 261 Concrete as a Socio-technical Process  
Elise Berodier
- 265 Urbanism and the Technosphere  
Albert Pope
- 271 Building to Cool the Climate: The New Carbon Architecture  
Bruce King
- 275 Epilogue: Standing on a Thin Arch: Incremental versus Radical Change  
Simon Upton
- 289 A Collection of Building Components and Materials  
Compiled by Something Fantastic
- 387 Donor Acknowledgment
- 388 Contributor Biographies
- 398 Image Credits
- 400 Colophon