

BROKEN

NATURE

Paola Antonelli
and Ala Tannir

XXII

Triennale

FID SOZIAL- UND
KULTURANTHROPOLOGIE
in Zusammenarbeit mit der DFG

di Milano

La Triennale di Milano
Electa

Contents

- 9 **Forewords** Stefano Boeri, Vicente Gonzalez Loscertales, Giuseppe Sala, Enzo Moavero Milanese, Alberto Bonisoli
- 16 **Broken Nature** Paola Antonelli
- 43 **A Changed Climate**
- 44 **Visions That Move Mountains** Ala Tannir
- 50 **Leaky Design for a Broken Present** Emily Eliza Scott
- 57 **Silent Spring and Rachel Carson's Epoch-Making Clarion Call for Unbreaking Nature** Maria Popova
- 62 **Totems** Neri Oxman and The Mediated Matter Group
- 68 **Plastiglomerate** Kelly Jazvac et al.
- 70 **Beyond Drifting: Imperfectly Known Animals** Mandy Barker
- 72 **Think Evolution #1: Kiku-ichi (Ammonite)** Aki Inomata
- 73 **Reliquaries** Paola Bay and Armando Bruno
- 74 **ALMA Music Box: Melody of a Dying Star** Whatever et al.
- 76 **Resurrecting the Sublime** Alexandra Daisy Ginsberg et al.
- 77 **Italian Tropics / Fiore di Loto** The Future Continuous
- 78 **Svalbard Global Seed Vault** Nordic Genetic Resource Center et al.
- 79 **Never Alone** Upper One Games
- 80 **Italian Limes** Studio Folder et al.
- 82 **Ice Stupa: Artificial Glaciers of Ladakh** SECMOL et al.
- 84 **Maldives/Sandbars** MIT Self-Assembly Lab et al.
- 85 **MARS** Alex Goad
- 86 **Nanohana Heels** Sputniko!
- 87 **Complex Environments**
- 88 **Redesigning the System** Adam Bly
- 94 **Biomonotony** Etienne Turpin
- 101 **The Great Animal Orchestra** Bernie Krause and UVA
- 104 **Ganges Water Machine: Designing New India's Ancient River** Anthony Acciavatti



106	Emergent and Erratic: Monsoonal Transmogrification of Land, Air, and Sea Monsoon Assemblages
108	Wind Map Fernanda Viegas and Martin Wattenberg
109	The Legal Status of Ice Irene Stracuzzi
110	Pacific Aquarium Design Earth
112	Anatomy of an AI System Kate Crawford and Vladan Joler
114	The Path to Luma Phosphor Games Studio
115	Caskia / Growing a MarsBoot OurOwnsKIN and Officina Corpuscoli
116	Million Dollar Blocks Spatial Information Design Lab, GSAPP et al.
118	The Fallacy of the Closed System [Malfictions] El Ultimo Grito
119	Local River Mathieu Lehanneur
120	Three Material Stories Lindsey Wikstrom Lee
122	Seed Journey Futurefarmers
123	Totomoxtle Fernando Laposse et al.
124	PIG 05049 Christien Meindertsma and Julie Joliat
126	Wonderwater Cafe Jane Withers and Kari Korkman

127 Made and Unmade

128	Better Nature Alexandra Daisy Ginsberg
133	Martin Margiela's Long-Lost Legacy: The Circular Economy Pioneer Shaway Yeh

138 Ore Streams Formafantasma

144	Fairphone 2 Fairphone
145	Mixtape Scott Bodenner
146	Transitory Yarn Alexandra Fruhstorfer et al.
148	Acoustic Fur Christien Meindertsma
149	Concept Shoe and UltraBOOST Uncaged from Adidas x Parley Parley for the Oceans and Adidas
150	Algae Geographies Atelier Luma / Luma Arles with Studio Klarenbeek & Dros et al.
152	Oki Naganode Julia Lohmann
154	The Agari Project Ari Jónsson
155	Geomerce Gionata Gatto and Giovanni Innella
156	Palm Stool from Can City Studio Swine
158	Cape Mongo Francois Knoetze
160	100 Chairs in 100 Days Martino Gamper
161	The Sausage of the Future Carolien Niebling and ECAL/Ecole cantonale d'art de Lausanne
162	Anima Kosuke Araki
163	Damaged Goods, Tracing, Under Blue Skies, and Going Blank Again Caroline Slotte
164	Terra Cotta #1 Talia Mukmel
165	Adaptive Manufacturing Olivier van Herpt and Sander Wassink
166	Hy-Fi Bricks The Living
168	Voxel Bio-welding and Jammed Bio-welding The Living
169	Tissue Printing Nervous System and Miller Lab at Rice University
170	Silk Pavilion Neri Oxman and The Mediated Matter Group
172	Alces Alces Victor Alge
173	Geolana Edizero Architecture for Peace
174	Capsula Mundi Anna Citelli and Raoul Bretzel

175	Mores of the Times
176	Imagining a World Out Loud: City Making as Creative Practice Gabriella Gómez-Mont
181	Conversations with Bina48 Stephanie Dinkins
186	The Room of Change Accurat
190	Fixperts Daniel Charry and Dee Halligan
192	>VEEG Social Label
193	Woobi Play Kilo Design and Airmotion Laboratories
194	Design Museum Dharavi Jorge Mañes Rubio and Amanda Pinatih
196	Urban Parasites Gilberto Esparza
197	NukaBot Dominique Chen and Ferment Media Research
198	Raising Robotic Natives Stephan Bogner et al.
200	No Plooshon Jacket Gruff ap Garth at Little Inventors
201	Super Grow 11000 Arthur Dobson at Little Inventors
202	SUN+ buro BELEN
204	Seated Design Lucy Jones
206	Period-Proof Underwear Thinx
206	Ruby Cup Ruby Life Ltd.
208	Women and Heart Disease: Physician Bias and AI Karthik Dinakar et al.
209	Janma—The Clean Birth Kit ayzh
210	Lia Pregnancy Test LIA Diagnostics
211	BEE'S Susana Soares
212	Tlaloque 200 Liter Isla Urbana
213	Água Carioca—Urban Circulatory Systems in Brazil Ooze Architects et al.
214	Water Tasting Arabeschi di Latte and Jane Withers Studio
215	Hippo Roller Pettie Petzer and Johan Jonker
216	Quinta Monroy Incremental Housing Project Elemental

217 Bridges

218	Never Despair, Your Miracle Is around the Corner: The Multiple Forms of Designing the Social Koyo Kouoh
224	What Is Not Mine Is Yours: Meliponiculture as Design Humanism Frederico Duarte
231	Mineral Autobiography Sophia Roosth

236 Birdsong Sigil

242	Grasslands Suspended Linda Tegg and Baracco+Wright Architects
243	A. A. I. Agnieszka Kurant
244	The Political Equator Estudio Teddy Cruz + Fonna Forman et al.
246	The Crime of Rescue—The Iuventa Case Forensic Oceanography and Forensic Architecture et al.
248	Abzû Giant Squid Studios
249	SoFi MIT Computer Science and Artificial Intelligence Lab
250	Il Leone delle Donne (Women's Lion) Chiara Vigo
252	The Ise Bay Project MAP Office
254	El árbol de la vida y la abundancia; La vega II; Mata de achioté; Vañoobo tabaco origen Abel Rodriguez

256	Ladybird Umbrella Sophia Carr at Little Inventors
257	Whale Songs PAIR and Creative Lab at Google
258	Goatman Thomas Thwaites
260	Human X Shark Ai Hasegawa
261	Sanctuary Patricia Piccinini
262	Moyasimon Masayuki Ishikawa
263	Menstruation Machine—Takashi's Take Sputniko!
264	Intake Facility for an Anonymous Client theLab-lab for architecture
266	Nature Self-Portraits Laura Aguilar

268 International Participations

270 **An Architecture of Acceptance, an Infrastructure of Interaction** Laura Agnesi and Marco Sammicheli

278	Algeria
281	Australia
284	Austria
287	Bhutan
290	China
293	Cuba
296	Czech Republic
299	Finland
302	France
305	Germany
308	Haiti
311	Italy
314	Lebanon
317	Lithuania
320	Republic of the Union of Myanmar
323	Netherlands
326	Poland
329	Russia
332	Slovenia
335	Sri Lanka
338	Tunisia
341	United Kingdom
344	United States of America

347	Milan
350	The Nation of Plants

352 Acknowledgments

355	List of projects and lenders in the show
357	Index of names and themes