

MIA ROTH-ČERINA

TYPES OF STANDARDIZED HOUSES IN POST-EARTHQUAKE RECONSTRUCTION

PROJEKTI TIPSKIH KUĆA ZA OBNOVU NAKON POTRESA



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 Authors: teachers of the Faculty of Architecture with associates
 Reviewers: Tihomir Jukić, Lenko Pleština
 Editor in chief: Bojan Baletić
 Managing editor: Luka Korlaet
 Spatial representations: David Penzar
 Design: Filip Ivančević, Ana Krapec
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Two major earthquakes of 2020 have dramatically impacted the goals and concerns of the architectural community in Croatia – the first one happened on March 20th with its epicentre near Zagreb, the other on December 29th with an epicentre near Petrinja. The aftermath of the damage prompted an introspective look into the way we protect and renew buildings erected before (or not adhering to) contemporary codes, but also gave a devastating insight into dismal living conditions and poor construction in many communities. While the first earthquake ignited discussions beyond mere safety and renewal of existing structures and expanded them into burning topics of planning and protection, the second one made bruises of a fundamentally existentialist nature, with hundreds of people left homeless overnight.

The Faculty of Architecture at the University of Zagreb immediately became involved with all issues related to these disastrous events – from its staff participating in the outpour of volunteer work, assessing damage, collecting and publishing archival documentation and research which could benefit renewal, becoming involved in bodies on all levels, contributing to planning, documenting, designing for reconstruction and renewal, and also producing new research, openly sharing knowledge, and reacting profoundly architecturally – by design. This book is a collection of a segment in these efforts, offering an open source of models justified in existing and possible technological and industrial resources, aimed particularly at those affected by the second earthquake in the County of Sisak and Moslavina, therefore looking into traditional patterns and local lifestyles to propose applicable, grounded solutions. While the activities preceding this collection of standardized, modular homes came from a collective series of engagements by professors, engineers and industry representatives, the initiative of the collection presented in this book came from the Dean of the Faculty, professor Bojan Baletić, and the Section of Housing led by its chair, associate professor Luka Korlaet, who brought together architects from all departments and acted as the book's editors.

The introduction by the Dean Bojan Baletić is followed by conclusions of a round table held at the Faculty on January 8th, initiated by professor Karin Serman and joined by professors Mateo Biluš, Mladen Josić, Josip Galić and Krunoslav Šmit, as well as a list of points for continued action, focusing on a series of issues, scales and temporal steps, but also identifying crucial partners. These conclusions resulted in fundamentals of actions spanning the direct and current engagement of architects and engineers, the political and procedural aspect, the legal and financial ones, the sociological and economic aspects of scenarios and perspectives of possible futures for areas which were in dire need of revising a sound strategy even before the earthquake struck.

Luka Korlaet contributed with a chapter chronicling the earthquakes' aftermath: the long-term changes they left in the soil, requiring a revision of geomechanical data for the whole area; the devastating percentage of damage to structures acquired through the ArcGIS Collector and coordinated by the Croatian Centre for Earthquake Engineering; the short-term and long-term solutions to lodgings, first as provisional containers and then as a system of dwelling types observed as an opportunity to improve living conditions which, in many of the affected areas, were of low quality to begin with.

Mateo Biluš, Dunja Mandić, Zorana Protić and Darko Uzarević provided a comparative analysis of possible structural systems and materials to be utilized in these standardized dwellings, both erected in-situ and prefabricated, establishing a useful overview whose use exceeds the immediate need of this collection, with an appendix of companies currently present in the Croatian construction market. This chapter is followed by an introduction to zero-energy building and its translation into concrete measures in individual housing, from materials, insulation, thermo-technical systems and requirements resulting from current legislation, authored by Zoran Veršić, Marin Binički and Davor Prodan Abramović. Finally, Mladen Josić laid out the design standards for these replacement dwellings based on various family sizes or co-housing arrangements, re-

quirements for modular articulation, spatial and technical standards, and finally, design guidelines.

Based on these precise inputs, an overwhelming outpour of responses by architects teaching at the Faculty (as well as their collaborators and partners) produced a collection of designs reflecting on traditional domestic rituals, vernacular patterns, specific dwellers (which in some cases include humans, animals and agricultural vehicles) and fast construction needs, channelling them into contemporary interpretations of flexible and sustainable homes enriching rural futures. Each design is laid out following an analogous structure: its concept and adaptability to various needs and contexts, architectural design, structural detailing as well as a unified table marking possibility of material use in relation to available industries. Contributions in this major segment of the volume have been made by teachers of the Faculty Vjera Bakić (with Matthias Kulstrunk), Bojan Baletić (with Zora Salopek Baletić and Davor Salopek), Alenka Delić (with Davor Delić), Vedran Duplancić, Ivana Ergić, Sanja Filep, Tin Sven Frančić, Jana Horvat, Mladen Josić (with Minja Josić), Siniša Justić, Vladimir Kasun (with Ian Kruezi and Ivan Mimica), Luka Korlaet, Rene Lisac, Dunja Mandić, Iva Martinis, Ljubomir Mišević (with Mark Mišević), Petar Misković, Lea Pelivan (with Studio UP), Ivica Plavec, Branimir Rajčić, Tamara Relić, Vanja Rister, Krunoslav Šmit (with Nataša Ivanisević, Katarina Kozlović and Ivan Matorić) and Nino Virag.

Both earthquakes prompted all involved – architects, planners, politicians, lawmakers, communities – to take a deep look into gaps existing in all steps of caring for the built environment which contributed to the damage being so vast and the reconstruction still moving at a slow pace. Apart from providing needed, targeted help for a region devastated by a natural disaster, this book, with its introductory and broad-but-concise approach to all actions and actors involved, provides a textbook of steps to be taken should another, hopefully less catastrophic, yet acute need, occur. The book is, finally, a testament to one of the fundamental callings of an architect: one of outreach, one of care.