

Road, Housing and Urban Development Research Center

Energy Efficient Housing for Iran

Pilot Buildings in Hashtgerd New Town

Farshad Nasrollahi, Philipp Wehage, Iffa als dat shahriari, Abbas Tarkashvand

1st Print: 2013

مشخصات نشر : تهران: مرکز تحقیقات راه، مسکن و شهرسازی، ۱۳۹۲=۲۰۱۳م. مشخصات نلاهرى : ۱۲۲ ص: مصور، جدول، نمودار، Young cities research paper series; 4.: فروست شایک : فيها وضعيت فهرستانويسى يادداشت Farshad Nasrollahi, Philipp Wehage, Effatolsadat Shahriari, : يادداشت Abbas Tarkashvand. يادداشت : اقست از روی چاپ ۲۰۱۳م.: برلین. أوانويسى عنوان : ساختمان سازی - - ایران - - هشتگرد - - صنعت و تجارت - - ذخیره انرژی - - نمونهپژوهی موضوع : ساختمان ها- - ایران - - هشتگرد - - ذخیره انرژی - - نمونهپژوهی بأسه افزوده : نصراللهي، فرشاد، ١٣٥۶ --Nasrollahi, Farshad: لناسه أقزوده شناسه افزوده : مرکز تحقیقات راه، مسکن و شهرسازی ردمبندی کنگره : ۱۳۹۲ ۱۸لف۲س/۱۳۹۲ TTT/VVFT: *****



Road, Housing d rb. elopment

Energy Eff in the outing for Iran - Pilot Buildings in hashtgerd New Town Farshad Na rolla. Philipp Wehage, Effatolsadat Shahriari, Abbas Tarkashvand

1st Print: 2013, 50 Copies, Price: 100,000 Rls

Address: P.O.Box 13145-1696 Tehran-Iran Tel: +98 21 8825 5942-6 Fax: +98 21 8825 5941

Web page: http://www.bhrc.ac.ir

e-mail: president@bhrc.ac.ir

ISBN: 978-600-5392-60-9

The Young Cities research project as well as the publication of the fourth volume of the "Young Cities Research Paper Series" would not have been possible without the support and collaboration of a wide range of German and Iranian institutions and experts.

The interdisciplinary German-Iranian Young Cities research project has been sponsored, on the German side, by the German Federal Ministry of Education and Research (BMBF). I would therefore like to express my sincere thanks to the Federal Ministry of Education and Research for its financial support.

Young Cities is a cooperation project between Technische Universität Berlin (TU Berlin) and the Road, Housing & Urban Development Research Center in Iran. The project's success as well as the publication of these results is based on a productive cooperation. My thanks are due to Prof. Dr. Fatemi Aghda, President of the Road, Housing & Urban Development Research Center in Tehran, TU Berlin and Prof. Dr. Rudolf Schäfer, director of the Young Cities project, for contributing towards the successful accomplishment of the project.

I also owe special thanks to the Iranian Ministry of Roads & Urban Development (MRUD) (formerly known as Ministry of Housing and Urban Development, MHUD), who sponsored the project on the Iranian side.

The Young Cities success on the German side was only possible through the interdisciplinary cooperation between experts from different fields at Technische Universität Berlin as well as other universities and institutions, including Berlin University of Arts, Freie Universität Berlin, Frauenhofer First, inter3, Nexus. p2mberlin and Berufsförderungswerk e.V. Special thanks go to all the participants of the Young Cities research project from the German project consortium or their fruitful interdisciplinary cooperation and teamwork.

I am very grateful to the New Towns Development orp at (NTDC) for providing the plot in Hashtgerd New Town for our surch and enabling Young Cities to design, and hopefully develop as pilot projects on the site.

Thank you also to Sharon Heidenreich for her outstanding proofreading of this volume as well as büro-d for its layout and graphic design, who all helped to increase the quality of this volume.

Finally, I would like to thank Cornelia Saalmann and Holger Ohlenburg, as my colleagues on the Board of Editors of the Research Paper Series, for their kind cooperation and reliable work on this volume.

Farshad Nasrollahi TU Berlin

The German side of the Young Cities project is partly funded by German Federal Ministry of Education and Research (BMBF).

SPONSORED BY THE



Federal Ministry of Education and Research

	Foreword F. Nasrollahi	7			
I 1	Introduction The Shahre Javan Community in Hashtgerd New Town -	8	IV	Pilot project: New Generation Residential Buildings; Learning from the past, designing for the future K. Rückert, E. Shahriari	. 70
	Concept and design for an energy-efficient and sustainable		1	Introduction	. 72
	urban quarter	10		Goals and strategies	. 72
	P. Wehage, E. Pahl-Weber	10		Research methodology	. 72
2	Architectural design for energy-efficient pilot buildings		4	Concepts of the project	
	in Hashtgerd New Town	12	5	Findings and governing price ple.	. 7 7
	F. Nasrollahi, P. Wehage		6	Architectural typology	. 78
	Energy-Efficient Architecture for Residential Buildings	14	7	Characteris s sub eighbourhood and residential	
11				blocks	. 80
_	F. Nasrollahi Introduction	16	8	Analysis of stra ura and material choices	. 81
1	Architectural Energy Efficiency	17	9	Archit cu pl	. 86
2	Research methodology	18			٠.
3	Architectural design and energy efficiency	19	V	A. Ite ur design process for Hashtgerd New Town	. 94
4	Conclusion .	32		1,1 hiz. 1. Tarkashvand, G. Raheb	0.6
5	Collegation			tre vion	. 90
TIT	Energy-Efficient-Homes for the Shahre Javan Community	38	2	neoretical approach	. 90
***	P. Wehage, A. Wolpert, E. Pahl-Weber	4		St tegies and goals	. 97
1	Introduction	7		sign strategies	106
2	Research methodology: a research-by-design process.	- 1	5	Architectural design	114
3	Design strategy - analysis and design approach	46	6	Architectural plans	. 114
4	Design solutions	48			120
	Perspectives	6	VI	Appendix	
	Architectural plans	62			