



# BLUEPRINTS

for Successful Public  
Housing Development

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**BluePrints for Successful Public Housing Development**

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# FOREWORD

The Singapore Concrete Institute (SCI), founded in 1978, is a non profit making institute formed primary to uphold the standards of excellence in the use of concrete and to improve concrete technology to help promote its use in development works. Concrete is foremost among the construction materials used in construction projects around the world and is a material that forms the bases of our modern society. Reasons for its widescale applications include its flexibility in usage, adaptability and low maintenance requirements during service.

Nowadays, in an effort to reduce energy consumption and minimize our environmental footprint, developers are embracing the concept of sustainability development — the ability to build structures we need today without depleting resources for the future. Architects, engineers and builders are opting for concrete due to its durability, recyclable ingredients and energy efficiency not found in other building materials like steel or wood.

In Singapore, the Housing Development Board (HDB), the largest public housing developer in Singapore, has been capitalizing on the use of concrete for over 40 years to shape its towns and estates. Through the efficient use of concrete and its related technologies, e.g. prefabrication, high strength concrete, prestressing, etc., HDB has successfully provided quality, low maintenance and affordable housing for more than 80% of the population in Singapore. This is no small feat and from its development programme has shown the superiority of concrete as a construction material and an environmentally friendly material to provide durable, long-lasting and energy efficient building solutions.

SCI is indeed very honored to work with HDB to publish this very special book appropriately entitled *Blueprints for Successful Public Housing Development*. This book outlines the key success factors and experience gone through by the team in HDB to make its public housing programme such a phenomenal success. The information and knowledge shared here will indeed be very useful to engineers, planners, architects, developers, students and any individual who is keen to understand how HDB has planned and strategized its public housing programme.

Finally, I would also like to congratulate Er. Lau Joo Ming and his team for producing such an exciting and interesting book and SCI Board of Directors for supporting its publication. Special thanks to Mr Willie Kay (SCI 1st Vice President), Mr Oh Lock Soon (SCI 2nd Vice President) and Er. Dr. Johnny Wong for making this book possible. My sincere thanks also to all the organizations who have contributed in one way or another towards the production of this book.

*Er. Ng Lay Cheong*

*President*

*Singapore Concrete Institute*

# INTRODUCTION

The Housing and Development Board (HDB) is the public housing authority in Singapore responsible for providing affordable and quality homes for 85% of the population. HDB has been constantly reviewing its policies and strategies to keep up with the rapidly changing needs of our society and living environment. The simple and precise mission to provide affordable, quality homes and to build communities will always remain relevant in the housing of a nation. Through these years of developing public housing, HDB has also nurtured and kept a strong team of in-house professional technical experts who were responsible in delivering the good quality homes for Singaporeans. They are the people behind the systems which continue to sustain, keep pace and strive for greater heights in our 'Blueprint of Successes'.

Many of these experts were invited to present and conduct seminars both locally and internationally to share our housing experience and our construction technology and management knowledge.

This book consolidates the few outstanding technical papers presented at the various forums and these papers are carefully sequenced so as to provide a complete picture for the entire building life cycle performance. It begins from design stage to construction stage, proceeds to maintenance stage and leads on to research and development. R&D will then provide new inputs back into the cycle and elevate the entire process to a higher platform and this cycle continues as a spiral of excellence.

In 20 years' time, the population will be very different from what it is now with very different needs that HDB has to consider for its future planning. HDB will continue to pay more attention to improve its design and life cycle performance of its built habitat and environment. As such, R&D and prototyping to looking beyond the functional aspects and more into engineering aspects of fixtures are being emphasized. We have invested heavily in research studies and collaborations and our challenge is to ensure that our innovations are environmentally sustainable in order to last for the many generations to come.

To deliver affordable quality homes and desire for continuous improvement and innovations, HDB has never compromised on any safety considerations. Safety is always our top priority and it should be a total integrated approach that weaves in at every stage of public housing development. One entire chapter has been dedicated to illustrate and reinforce on HDB's strong safety culture and belief.

It has always been my personal passion to have a comprehensive literature that gathers the technical wisdom accumulated through the years of public housing development. For I believe that in sharing our experience, we share best practices, generate new ideas and create new aspirations. It is with you that I share and also from you that I learnt to make the public housing a success.

I would like to thank my colleagues, our business partners, professors from research centres in National University of Singapore, Nanyang Technological University, polytechnics and many professional and government bodies for contributing in one way or another to build up this wealth of knowledge. Special thanks to Singapore Concrete Institute in working with HDB to publish this book.

*Er. Lau Joo Ming*

*Deputy Chief Executive Officer  
Building Group  
Housing & Development Board*

## Brought to you by ...



From Left to right: Mr. Wang Chien Looi, Er. Ho Fui Chan, Er. Teh Poh Suan, Mr. Andrew Yoong Yaw Yuan, Er. Ng Say Cheong, Er. Tan Marcus, Er. Lau Joo Ming, Er. Shum Chee Hoong, Er. Wong Swee Khian, Er. Dr. Johnny Wong Liang Heng, Mr. Ng Chun Tat, Er. Fong Chor Cheong, Mr. Eng Boon Kai, Ms. Jessie Tan, Ms. Tan Gee, Mr. Lawrence Pak Yew Hock(not in photograph), Ms. Regine Ee Suat Ping(not in photograph).

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# Content

Birth of Public Housing	<i>Chapter 1</i>
Construction Quality Control Management System	<i>Chapter 2</i>
Mechanical and Electrical Services Excellence	<i>Chapter 3</i>
Construction Technology	<i>Chapter 4</i>
Prefabrication for Success	<i>Chapter 5</i>
Prefabrication Technology Centre	<i>Chapter 6</i>
Design for Building Performance	<i>Chapter 7</i>
Resources Management	<i>Chapter 8</i>
Safety Excellence	<i>Chapter 9</i>
Innovation and the New Focus	<i>Chapter 10</i>

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