सत्यमेव जयते
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Preface

In the PRAGATI meeting held on 12th July 2017, Hon'ble Prime Minister emphasized and exhorted the States to accelerate the adoption of new construction technologies to improve the pace and quality of work under PMAY (U) in order to address the challenges of rapid urban growth and its attendant requirements. Under this scheme nearly 11.2 million houses are to be constructed by 2022; over 10.8 million houses have already been sanctioned so far. Out of about 6.7 million houses which have been constructed/under construction; around 1.5 million are using new technologies. Construction of houses at this scale offers an opportunity for new and alternative technologies from across the globe which may trigger a major transition through introduction of cutting-edge building materials, technologies and processes.

The Government of India has further emphasized the need to accelerate the adoption of new construction technologies to fast track and improve quality of construction under the Pradhan Mantri Awas Yojana (Urban) – Housing For All Mission in order to address the challenges of rapid urban growth and its attendant requirements. Recently, Ministry of Housing and Urban Affairs (MoHUA), Government of India successfully conducted a Global Housing Technology Challenge - India (GHTC- India) to identify and mainstream a basket of innovative housing technologies from across the globe which are cost effective, speedier, sustainable and disaster-resilient and ensure a higher quality of construction of houses, meeting diverse geo-climatic conditions and desired functional needs. It furthers the transformative vision of the Hon'ble Prime Minister and his belief in technological advances to rapidly deliver low-cost housing that meets stringent environmental, societal, quality and economic standards.

Through GHTC-India, 54 new proven technologies have been identified. These technologies are now being showcased through execution of Light House Projects (LHPs) across six States. These LHPs will act as live laboratories to establish clean and green construction practices across India and will help in sustainable construction. GHTC-India is also planning to incubate and accelerate identified potential future technologies through Affordable Sustainable Housing Accelerator (ASHA) - India.

In order to mainstream these new systems in the construction sector there is need to create an enabling eco-system to facilitate field level applications. Under PMAY-U Mission, MoHUA has setup a Technology Sub-Mission (TSM) which aims to encourage the use of

sustainable & safe practices across States/ UTs with the help of IITs/NITs/SPAs and other institutes of repute. Also, Building Materials and Technology Promotion Council (BMTPC), an autonomous organization under the aegis of MoHUA operates Performance Appraisal Certification Scheme (PACS) through which any innovative systems can be evaluated and certified. In order to give further impetus to these technologies, MoHUA has assertively pursued Central Public Works Department (CPWD), Bureau of Indian Standards (BIS) and State/ UT departments to come out with notifications, circulars, Schedule of Rates (SORs), specifications etc. which will authorize State/UT Governments to use these new construction technologies in housing projects. The National Building Code of India has also made provisions to ensure utilization of number of new/alternative building materials and technologies in the construction sector.

Promotion of awareness and extension efforts on new technologies is one of the key aspect to create enabling eco-system for usage of these technologies in the construction projects. Therefore, in order to familiarise and create awareness amongst building professionals about the new and emerging building materials and technologies for housing and building construction, the need of the hour today is to introduce a Certificate Course on Innovative Construction Technologies. Accordingly, my Ministry in collaboration with School of Planning & Architecture (SPA), New Delhi and Building Materials & Technology Promotion Council (BMTPC) is launching NAVARITIH/**नवरीतिः** (New, Affordable, Validated, Research Innovation Technologies for Indian Housing) – A Certificate Course on Innovative Construction Technologies.

To start any course, it is necessary to develop the course contents and reading material. As regards, innovative systems, information is available in bits & pieces and there are no text books available summarizing all systems. Therefore, information from various resources have been collected and compiled in concise form to develop this reading material by BMTPC, SPA and resource persons from CPWD, IITs and CSIR Laboratories. It is collection of technical information available on technologies worldwide and it is first of its kind on the subject. We are sure, it will help the readers to comprehend these innovative systems and implement them in their future construction projects. The Course will be conducted through class room lectures and field visits for hands-on exposure to innovative technologies. The Course will help in capacity building of professionals in use of new technologies.

I place on record the commendable work done by BMTPC in association with SPA New Delhi and other academic & research institutions and wish them success.

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(Durga Shanker Mishra)