GOVERNMENT OF INDIA
MINISTRY OF HOUSING AND URBAN AFFAIRS
LOK SABHA
UNSTARRED QUESTION NO. 1184
TO BE ANSWERED ON FEBRUARY 09, 2023

QUALITY OF CONSTRUCTION OF HOUSES

NO. 1184. SHRI PARVESH SAHIB SINGH VERMA:
SHRIMATI POONAMBEN MAADAM:

Will the Minister of HOUSING AND URBAN AFFAIRS be pleased to state:

(a) whether the Government proposes to launch a technology submission for adopting modern, innovative, green technologies and building material for faster and quality construction of houses under different schemes and if so, the details thereof;
(b) whether the Government is collaborating with IITs and Architecture institutes for developing technical solutions and if so, the progress made so far in this regard;
(c) the steps taken by the Government for providing sustainable technological solutions for faster and cost effective construction of houses;
(d) the innovative steps taken by the Government to manage Construction and Demolition waste; and
(e) whether there is any scheme concerned with building houses suiting to the geo-climatic and hazard conditions of the country and if so, the details thereof?

ANSWER
THE MINISTER OF STATE IN THE
MINISTRY OF HOUSING AND URBAN AFFAIRS
(SHRI KAUSHAL KISHORE)

(a) : Ministry of Housing and Urban Affairs (MoHUA) is implementing Pradhan Mantri Awas Yojana – Urban (PMAY-U) 'Housing for All' Mission since 25.06.2015 through States/Union Territories (UTs) for providing all-weather pucca houses to all eligible urban beneficiaries. A Technology Sub-Mission (TSM) under PMAY-U has been set up for the adoption of innovative, sustainable, eco-friendly and disaster-resilient technologies and building materials for fast, cost effective and quality construction of houses. The objective of the Sub-Mission is to coordinate with various regulatory and administrative bodies for mainstreaming and up scaling the deployment of modern construction technologies and material in place of conventional construction. Building Materials and Technology Promotion Council (BMTPC) under the ageis of Technology Sub-Mission also coordinates with other agencies working in green and energy efficient technologies, climate changes etc.

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(b) : Under Affordable Sustainable Housing Accelerators - India (ASHA-India) initiative, incubation and acceleration support is provided to potential future technologies that are not yet market ready (pre-prototype applicants) or to the technologies that are market ready (post prototype applicants) respectively. Five ASHA-India Centres have been set-up at various four IITs (Bombay, Kharagpur, Madras, Roorkee) and Council of Scientific and Industrial Research- North East Institute of Science and Technology (CSIR-NEIST), Jorhat, Assam in collaboration with CSIR-CBRI, Roorkee for providing incubation support to the shortlisted potential technologies.

(c) : Furthermore, following steps have been taken by the Government for providing sustainable technological solutions for faster and cost-effective construction of houses:

i. Identification, Evaluation and Certification of Emerging Technologies for adoption by Public/Private agencies.
ii. Global Housing Technology Challenge – India (GHTC-India) was initiated to identify and mainstream globally best available proven construction technologies that are rapid, sustainable, green and disaster resilient.
iii. Under GHTC-India, 54 innovative proven construction technologies shortlisted from across the globe.
iv. Six Light House Projects (LHPs) using six distinct technologies shortlisted under GHTC-India are constructed at six places in the country.
v. Under Affordable Sustainable Housing Accelerators - India (ASHA-India) initiative, 48 potential future technologies in both Pre & Post prototype categories were shortlisted by Technical Evaluation Committee set up by MoHUA.
vi. Under ASHA-India, five Incubation Centres have been set up to provide Incubation Support to potential future technologies that are not yet market ready.
vii. 14 Demonstration Housing Projects using New Technologies are built under PMAY-U to showcase innovative technology options to States/Union Territories (UTs) and disseminating technical awareness among professionals.
viii. A free online Enrolment of TECHNOGRAHIS has been started for exposing the interested stakeholders to learn different phases of use of innovative technologies in LHPs for adoption and replication.
ix. An online course named NAVARITIH (New, Affordable, Validated, Research Innovation Technologies for Indian Housing) has been started to enhance the capability of building professionals about the new and emerging building materials, technologies and processes for construction.
x. Indian Housing Technology Mela (IHTM) was organized to showcase the domestic indigenous and innovative technologies, building materials and construction processes for low & medium rise houses. 84 innovative technologies/products/materials were shortlisted under IHTM.

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xi. Under the Indian Urban Housing Conclave (IUHC) a National Exhibition on Innovative construction practices was organized to showcase more than 85 innovative construction systems & materials.

xii. MoHUA in association with GIZ and BMTPC is hosting series of trainings/workshops on Innovative Construction Technologies and Thermal Comfort for Affordable Housing named RACHNA (Affordable and Comfortable Housing through National Action). 75 RACHNA training programmes spreading over 30 cities have been successfully conducted across India, covering over 4,500 stakeholders.

xiii. Performance Appraisal Certification Scheme (PACS) is being operated for Identification, Evaluation and Certification of Emerging Technologies suiting to different geo-climatic conditions of the country, which are safe, sustainable and environment-friendly and ensure faster delivery of quality houses by BMTPC, MoHUA. Under PACS, so far 77 innovative products and systems have been certified.

xiv. Various publication on innovative construction technologies and other areas related to faster, cost effective, environment friendly, disaster resistant, sustainable construction.

xv. CPWD has brought out "Guidelines for Sustainable Habitat" to evaluate use of sustainable technologies and choice of material based on sustainable index.

(d) : The following steps have been taken by the Government to manage construction and Demolition (C&D) waste:

i. Ministry of Environment & Forest & Climate Change (MOEF&CC) has issued Construction & Demolition waste Management Rules, 2016 which specifies for time bound setting up of C&D waste-based units by ULBs & usage of C&D waste products in the Construction works.

ii. MoHUA has prepared a Ready Reckoner for Utilization of Recycled Produce of C&D Waste to guide and facilitate the stakeholders for easy understanding and implementation of "C&D Waste Management Rules, 2016" towards 100% utilization of C&D waste material as envisaged under Swachh Bharat Mission. In-situ processing of C&D Waste for large size redevelopment projects has been focused to minimize the impact on the environment as well as on the cost of produce.

iii. MoHUA has published Guidelines for utilization of C&D waste in construction of dwelling units and related infrastructure in housing schemes.

iv. Central Pollution Control Board, Ministry Environment Forest and Climate Change, Govt. of India in March 2017 has brought out A Guide on Environmental Management of Construction and Demolition (C&D) Wastes. CPCB Guidelines address the uses pertaining to abatement of adverse environment impacts arising from C&D Waste management activities.

v. CPWD has issued directions to use C& D waste products in its construction works. Various Public agencies such as NBCC, DDA, PWD Delhi have issued similar directives.

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(e) : Land and Colonisation being State subjects, their planning and construction are regulated through Development Regulation and Building Byelaws of respective States/Union Territories (UTs). Ministry of Housing and Urban Affairs (MoHUA) is implementing the Pradhan Mantri Awas Yojana - Urban (PMAY-U) to provide pucca house with basic amenities to the eligible urban families in partnership of States/UTs with the vision of 'Housing for All'. PMAY-U scheme guidelines stipulates that the houses under the Mission should be designed and constructed to meet the requirements of structural safety against earthquake, flood, cyclone, landslides etc. conforming to National Building Code and other relevant Bureau of Indian Standards (BIS) Codes.

Further, BIS has brought out Indian Standards for building construction and structures in various geo-climatic and hazard conditions. Various provisions contained in the relevant Indian Standards/Codes/Specifications/Guidelines for design and construction of buildings in various geo-climatic and hazard conditions are required to be followed by all the public and private construction agencies for safety, stability and durability of buildings. In addition, the National Building Code of India 2016, has necessary administrative and technical provisions for safety of structures responding to various geo-climatic and hazard conditions.

MoHUA through BMTPC has also issued Vulnerability Atlas of India (Third edition) which gives State-wise hazard maps with respect to earthquakes, wind & cyclone and floods and district-wise vulnerability of housing stocks, based on the materials used for walling and roofing of the building, as per the Census data. This Atlas is a tool to natural disaster, preparedness and mitigation for housing and related infrastructure. The digitized version of the Vulnerability Atlas of India is available at https://vai.bmtpc.org/.

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