

# GUIDELINES FOR CONSTRUCTION OF DEMO HOUSES UNDER PMAY-G

RURAL HOUSING DIVISION  
MINISTRY OF RURAL DEVELOPMENT, GOI



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## Abbreviations–

1. **PMAY-G** - Pradhan Mantri Awaas Yojana – Gramin
2. **FFI-PMAYG** - Framework for Implementation-PMAY-G
3. **IIT** - Indian Institute of Technology
4. **UNDP** - United Nations Development Programme
5. **CSIR-CBRI** - Council of Scientific and Industrial Research - Central Building Research Institute
6. **BDO** - Block Development Officer
7. **PIA** - Project Implementing Agency
8. **ILO** - International Labour Organization
9. **IISc** – Indian Institute of Science
10. **TP** - Training Provider
11. **BOQ** - Bill of Quantities
12. **DPR** – Detailed Project Report
13. **JE** - Junior Engineer
14. **TA** -Technical Assistant
15. **T&P** - Tools and Plants
16. **QP** - Qualification Pack
17. **IT** - Information Technology

## 1. Background–

Pradhan Mantri Awaas Yojana – Gramin (PMAY-G) aims at providing the pucca houses, with basic amenities, to all rural houseless households and those households living in kutcha and dilapidated houses, by 2022.

While achieving this huge target, to promote the use of region-specific appropriate construction technologies in the construction of PMAY-G houses, Framework for Implementation-PMAY-G (FFI-PMAYG) emphasizes that the beneficiary should be assisted with options of house designs according to local conditions, using appropriate technologies suitable to the region of their residence.

The use of region-specific design typologies and specifications in the construction of PMAY-G houses will make them socio-culturally acceptable, reduce the cost of the building, increase the disaster resilience, and generate livelihood in the local communities. Over and above with the use of low embodied energy building materials, the possible adverse environmental impact associated with high housing targets can be reduced.

## 2. Demo houses under PMAY-G –

As an effort in the promotion of locally appropriate house designs, MoRD with the help of the Indian Institute of Technology, Delhi (IIT), and the United Nations Development Programme (UNDP) undertook region-specific studies in the selected states and developed house design typologies for clearly identifiable housing zones. The range of the materials and technologies proposed through these typologies have been architecturally and structurally validated by CSIR-Central Building Research Institute (CSIR-CBRI), Roorkee. As an outcome of the study, MoRD has published a compendium of Rural Housing Typologies with the name ‘Pahal (Volume-II)’. In the remaining States/ UTs house design typologies for different housing zones being developed/ have been developed by the State/ UTs themselves.

As further facilitation, for a proper understanding of house design typologies to the beneficiaries, demonstration houses built using such typologies must be available to be visited by them. This would provide an opportunity for the beneficiaries to

experience the spaces, volume, circulation, privacy, light, ventilation, type of finishing, doors, windows, etc. in the suggested house designs. In addition, they will get a clear idea of the cost and incremental development of the house.

**Therefore, demonstration houses with the house designs based on space planning, technologies and specifications appropriate to the local context may be constructed preferably at the block level and made them available for the beneficiaries to visit.**

### 3. Designs-

Demo houses at block level may be constructed with the following housing designs-

3.1. House designs in a compendium - 'Pahal (Volume-II)', which includes 108 house design typologies for 15 States viz. Assam, Bihar, Chhattisgarh, Himachal Pradesh, Jharkhand, Madhya Pradesh, Maharashtra, Manipur, Meghalaya, Odisha, Rajasthan, Sikkim, Tripura, Uttar Pradesh, and West Bengal.

3.2. House design typologies developed by the States/ UTs for its different housing zones considering local geo-climatic conditions, availability of local materials and technologies, vulnerability to disaster/hazards, livelihood aspects linked to housing designs and existing community skills and as validated by any of the reputed national technical institutes enclosed at **Annexure-I**.

3.3. House design typologies developed by the national technical institutes such as CSIR-CBRI, IITs, NITs, IISc, etc. with alternative construction technologies and are viable/ appropriate in the regional context.

### 4. Location-

4.1. Demo houses are preferably to be constructed at the Block level and proposed to be visited by the beneficiaries in the Gram Panchayats in that Block. Considering **visibility and accessibility by the beneficiaries**, demo houses shall be constructed if possible, in the office premise of Block Development Officer (BDO). They may also be constructed on the Government or public land near market places, public places, areas of the community congregation, bus stand, etc. provided that the buildings after their completion shall serve an additional official purpose

for the block administration such as office space, canteen, information kiosk for the PMAY-G beneficiaries to act as a rural housing facilitation center, etc.

4.2. Since the prime objective of constructing the demo houses is that they are to be visited by the PMAY-G beneficiaries, no such activity shall be proposed in the buildings which would restrict entry to the beneficiary or not allow them to experience the indoor spaces. Demo houses shall be available to be visited by the beneficiary in the day time during official working hours.

4.3. The appropriate site for the construction of demo-houses may be identified in the consultation with technical personnel from the Project Implementing Agency (PIA) / State Government. Some of the technical and functional considerations while selecting the site are listed below -

- i. The site for all the demo houses shall be on the same premise.
- ii. The site shall be located on elevated terrain and not in low lying areas.
- iii. The site with reclaimed <sup>[1]</sup> or expansive <sup>[2]</sup> soil should be avoided as far as possible.
- iv. The groundwater level at the site should be adequately low.
- v. The site should have proper vehicular and pedestrian access.
- vi. The selected site should be large enough; to ensure the building abundant light and ventilation to prevent any over dominance by the neighbouring buildings.
- vii. Civic services such as water supply, drainage sewers, electric lines, telephone lines, etc. should be near to the selected site to obtain their services at no extra cost.

## 5. Number of houses to be constructed –

The number of demo houses at the block level shall be based on the number of developed and validated house design typologies, appropriate to the geographical region covered under the block administration.

## 6. Project Implementing Agency (PIA) –

6.1. State/ UT shall appoint PIA for the execution of the Demo houses. For the same purpose, the proposals may be invited from the organisations/ institutes having expertise in the required construction technologies for the construction of demo houses. There can be more than one PIA for construction of different Demo-Houses considering their expertise in specific construction technology. The organisations/ institutes which can be onboarded as PIAs are:

- i. National and State level Government agency/ department.
- ii. International Organizations.
- iii. Technical institutes within the states like CSIR-CBRI, IITs, IISc, etc.
- iv. Public Sector Undertaking (PSU) or a Public Sector Enterprise (PSE) in the field of building construction.
- v. The organisation involved in the development of region-specific house design typologies for the State/ UT.
- vi. The organisations having expertise in construction with appropriate technologies and as decided by the state.
- vii. Training Provider (TP) engaged for rural mason training under PMAY-G.

For the design typologies developed/ validated by IIT and CSIR-CBRI, they can also be appointed as PIAs directly for their own designs. The PIAs could also be a combination of above with a strong local agency that is willing to work with the guidance provided by the technical support from the above-mentioned agencies. But this will be adopted as a last recourse.

6.2. The role of PIA are as under -

- i. Appointing a full-time site supervisor
- ii. Working out Bill of Quantities (BOQ)/ cost estimate for the design typologies for demo houses with the help of the Junior Engineer (JE) / Technical Assistant (TA) on the project.
- iii. Deployment of the masons/ artisans for the construction of demo house
- iv. Procurement of the materials, labour, tools, and plants (T&P) with the help of JE/TA.
- v. Construction of Demo house including all the finishes as per specifications
- vi. Preparation of project report and submission at BDO office



- vii. Completion of the demo house in a time-bound manner.
- viii. Additionally, PIAs can also be engaged for Development of Analysis of Rates / Detailed Project Report (DPR)/ Cost comparison. Getting the same validated from National Technical Institutes with the help of state government to facilitate its inclusion in the Schedule of Rates (SoR).

## 7. The nomination of technical officers -

State Government may nominate one JE / TA at the block level to extend technical support like working out BOQ for the design typologies for demo houses and logistic support like procurement of the materials, labour, T&P, etc. for smooth implementation of the project.

## 8. Rural mason training on Demo house–

Demo houses on which training can be imparted to the candidates in compliance with National Skill Development Corporation (NSDC) approved Qualification Pack (QP) for rural mason / QPs on alternative construction technologies, the rural mason training may be clubbed with the construction of demo houses. The processes for training the rural masons on demo houses will remain the same as given in the guidelines for Rural Mason training. In such a case, the training provider will take care of the responsibilities of PIA but funding to the TP will remain as per Rural Mason Training Guidelines issued by the Ministry along with subsequent amendments.

## 9. Funding–

9.1. A component from the admin fund released to the State/ UT shall be used for the construction of demo houses. Funding pattern to the PIA for the construction of one demo-house is detailed below -

<b>S N</b>	<b>Item</b>	<b>Cost (INR)</b>	<b>Source of funding</b>
<b>1</b>	<b>Professional fees to PIA</b> (Includes- salary of the site supervisor (including	<b>Up to INR 80,000/-</b> (Rationale- nearly equal to per house pay out under RMT	State admin fund/ Under special project by MoRD/

<b>S N</b>	<b>Item</b>	<b>Cost (INR)</b>	<b>Source of funding</b>
	TA and DA), expert visits by the PIA at least at 3 different levels of construction, Report documentation, etc.)	= INR 46.7 (Common norms' rate) *5 (Masons)*8 (hours)*45(days) = INR 84,060)	Any other authorised source of funding
<b>2</b>	<b>Construction Cost</b>	<b>Up to INR 1,40,000/-</b> (for plain areas)/ <b>Up to INR 1,50,000/-</b> (for hilly, difficult areas and IAP districts, as per cost estimation). It can exceed in accordance with the additional financial support being provided by the State/ UT to the beneficiaries over and above the assistance under PMAY-G	State admin fund/ Under special project by MoRD/ Any other authorised source of funding
<b>3</b>	<b>Miscellaneous</b> (Contingency, IEC information board, a lamp-post near house entrance, roof-top rainwater harvesting, etc.)	As per the cost estimation pre-approved by the appropriate authority (Shall not exceed INR 50,000/-)	State admin fund/ Under special project by MoRD/ Any other authorised source of funding

9.2. Funding to the PIA may be released by the State Government as per the following installments –

<b>S N</b>	<b>Item</b>	<b>Installments</b>
1	At the time of signing an agreement with PIA	30% of the professional fees

<b>S N</b>	<b>Item</b>	<b>Installments</b>
2	Submission of the Cost estimate prepared by the PIA with the help of TA and JE	100% of the total cost of construction (including miscellaneous) as per approved estimate.
3	Completion of the Demo- house, Submission of documentation report, After issuance of Completion Certificate by an engineer not below the rank of Executive Engineer/ equivalent.	Remaining 70% of the professional fees

Additional funding for the construction of the demo houses would be available under special projects.

## 10. Quality and monitoring –

Completion of the demo houses will be monitored at the different levels of administration with an IT-based module in the AwaasSoft being developed by the Ministry. The construction quality of the demo houses shall also be reviewed by the senior engineering staff at the State/ District level.

## 11. Popularising the demo houses –

Block/ GP level administration shall plan for different IEC activities at the Gram Panchayat and Block level for awareness of beneficiaries towards the purpose of Demo houses. The following is an indicative set of activities that can be done towards popularising demo houses, and to ensure maximum footfall:

- Official/ Socio-cultural activities may be proposed around the demo houses to attract beneficiaries to visit the buildings.
- Exposure visit to demo houses may be organised by the Gram Panchayat Office.
- Other IEC activities like an advertisement, promotion vans, wall painting, hoardings, banners, promotion in village haats and rural markets, may be explored.

- Video and other documentation will be prepared and displayed and shared on important occasions.
- Media visits to be conducted around the demonstration houses.

## 12. Documentation–

Project report on the completion of the house consisting of architectural drawings, structural drawing, construction details, cost estimate, item wise actual cost of construction, illustrations, photographs at different levels of construction, description whenever required, etc. Shall be prepared by the PIA. The report may be submitted to the BDO for uploading on the Awassoft. Report on demo house construction in the local language may be availed by the block office to the beneficiary on demand.

## 13. Schedule of activities and responsibilities-

The suggestive schedule of activities and responsibility matrix has been enclosed at **Annexure-II.**

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<sup>[1]</sup> Landfill soil

<sup>[2]</sup> Soil that is prone to large volume changes (swelling and shrinking) due to changes in water content.

### **National Technical Institutes for Architectural and Structural validation of the house design typologies developed by the States/ UTs-**

1. CSIR - Central Building Research Institute, Roorkee
2. IITs with Architecture/ Civil / Structural engineering department.
3. NITs with Architecture/ Civil / Structural engineering department.
4. IISCs with Architecture/ Civil / Structural engineering department.

## Suggestive schedule of activities and responsibility matrix -

S N	ACTIVITIES	TIME LINE (IN WEEKS)																					
		<1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	19<	
1	Development and validation of design typologies for different housing zones in the State/ UT along with the quantity estimations	M/S																					
2	Identifying designs for Demo houses from the validated design typologies		S	S																			
3	Site identification for the construction of Demo houses at the block level				S	S																	
4	Deputing one JE / TA from the block office for the project				S	S																	
5	Awarding contract to the PIA				S	S	S	S	S														
6	Appointing a full-time site supervisor									P													
7	Workout BOQ for the design typologies for demo houses with the help of the JE /TA									P/S													
8	Procurement of the materials, labour, tools and plants (T&P) with the help of JE /TA										P	P											
9	Construction of Demo house including the finishes as per specifications.											P	P	P	P	P	P	P	P	P	P		
10	Documentation, report compilation and submission to BDO office																						P

M - Ministry of Rural Development | S – State Government | P- Project Implementing Agency