Consultation Paper on Framework for Quality Assurance in Real Estate Projects

Maharashtra Real Estate Regulatory Authority (MahaRERA)

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1. Background

Government of India introduced Real Estate (Regulation and Development) Act (RERA) 2016 for regulation and promotion of the real estate sector in the country. The key objective of the Act is to usher in greater transparency, accountability, customer centricity, speedy dispute resolution and financial discipline in the real estate sector in India.

The Act particularly lays great emphasis on Quality of Construction. As per Section 14(3) of the Act, "In case **any structural defect or any other defect in workmanship, quality or provision of services** or any other obligations of the promoter as per the agreement for sale relating to such development is brought to the notice of the promoter within a period of five years by the allottee from the date of handing over possession, it shall be the duty of the promoter to rectify such defects without further charge, within thirty days, and in the event of promoter's failure to rectify such defects within such time, the aggrieved allottees shall be entitled to receive appropriate compensation in the manner as provided under this Act."

The legislation offers a curative solution for problems pertaining to construction quality faced by allottees. Nonetheless, it is crucial to prioritize the prevention of such construction defects from arising in the first place.

With this background, MahaRERA intends to implement a comprehensive Framework for Quality Assurance, dedicated to ensuring defect- free apartments for allottees. This initiative aims to enable homebuyers, even those who may not comprehend technical details, to assess the quality of a project and make well-informed decisions.

2. International Examples

Quality Assessments / Assurance Systems in Real Estate Projects have been introduced by Several countries.

2.1. Singapore

Building and Construction Authority (BCA), Government of Singapore is the statutory authority responsible for safety, quality, inclusiveness, sustainability and productivity of Real Estate Sector in Singapore.

The Building and Construction Authority (BCA) developed the CONQUAS - Construction Quality Assessment System in 1989, in conjunction with major public sector agencies and various leading industry professional bodies, organizations and firms to measure the quality level achieved in a completed building project. CONQUAS 2022 is the eleventh edition of the CONQUAS assessment scheme after more than 30 years of implementation.

CONQUAS was designed with three objectives:

a) To have a standard quality assessment system for new building projects.
b) To make quality assessment objective by:
    - ✓ measuring constructed works against workmanship standards and specification.
    - ✓ using a sampling approach to suitably represent the whole project.
c) To enable quality assessment to be carried out systematically within reasonable cost and time.

The assessment consists of four components:

1) Internal Finishes,
2) Installation Methods Verification and Functional Tests,
3) External Finishes, and
4) Bonus Points – discontinued for projects with construction tenders called from 1 July 2023

Each component is further divided into different items for assessment.

(a) Internal Finishes

Internal finishes deal mainly with the finishes and components. This is the part where the quality and standard of workmanship are most visible. The assessment covers:

i. architectural finishes, which includes floors, internal walls, ceiling, doors, windows and components. Components include permanent internal fixtures (such as wardrobe, kitchen

cabinet, vanity top, mirror, bathtub, water closet, shower screen, basin etc.), and permanent external fixtures (such signage, railings, unit number plates, lift fittings, letter box, lightings, metal gate, etc.).

ii. basic M&E fittings, which includes taps and mixers, WC, floor traps, electrical switches, trunkings, fan coil unit, air-con diffuser, light fittings, CCTV camera, shower head, etc. At the lift lobby, lift display and call-button panels are checked as M&E basic fittings.

b) Installation Methods Verification and Functional Tests

i. Installation methods verification on the following 4 trades is carried out during the initial construction stage of the project:

A. Waterproofing works to bathrooms/toilets
B. Stone/tiling installation works
C. Timber flooring installation
D. Window installation

The entire process for the above-mentioned trades is verified by BCA against the submitted approved method statements and compared against BCA's good industry practice guides.

(c) External Finishes

i. The assessment will cover the roofs, external walls and external works at the completion stage of the building.

Basis of the Quality of Projects of Developers, Developers are then categorised into bands. CONQUAS Banding consists of 6 bands, ranging from Band 1 i.e. very low incidence of major defects to Band 6 i.e. higher incidence of major defects. Developers and builders' CONQUAS bands would be derived based on average CONQUAS performance of their completed projects in the past 6 years i.e. track record, while projects' bands would be derived from their CONQUAS performance.

3. National Context

3.1. Pradhan Mantri Awas Yojana (Urban)

Government of India launched Pradhan Mantri Awas Yojana (Urban) to ensure Housing for All in Urban Areas. Pradhan Mantri Awas Yojana (Urban) has four key components:

i. In-Situ Slum Redevelopment (ISSR): Rehabilitation of Slum Dwellers with participation of private developers using land as a resource
ii. Credit Linked Subsidy Scheme (CLSS): Promotion of Affordable Housing through Credit Linked Subsidy
iii. Affordable Housing in Partnership (AHP): Affordable Housing in Partnership with Public & Private sectors
iv. Beneficiary-led Construction (BLC): Subsidy for Beneficiary led individual house construction / enhancement

This scheme has a vital component of Third-Party Quality Monitoring Agencies (TPQMA) to ensure quality of construction under various components of the Mission except CLSS.

Under the scheme guidelines, TPQMA are required to undertake field visits for ascertaining quality of construction at various stages of construction (preferably at the beginning i.e. 10-15 % of progress, mid of construction i.e. 50-60 % of progress and completion i.e. 85-100 % of progress).

Ministry of Housing and Urban Affairs has prescribed the format for TPQMA Report. A snapshot of the Report ensuring Quality Assurance is listed below:

Annexure 2: Third Party Quality Monitoring Report of ISSR/AHP projects under PMAY (U)

C. Quality Assurance in Project		
1.	Whether authenticated copy of DPR, contract document, structural drawings and copies of specifications are available at site ?	

2.	Whether the Inspection Registers, Site order book and Quality control Test registers are maintained at the site properly and endorsed by the Engineer –in-charge ?	
3.	Whether list of ISI marked/approved materials to be used is available at site?	
4.	Is there a provision in Contract/Tender to provide 'Test facilities on site ”?	
5.	Whether testing facilities to check quality of material is available at site? if yes attach list of Equipment	
6.	(i) Whether the structural Designs are approved / Proof checked by competent Authority (ii) Name of the approving authority for structural design. (iii) Whether the statuary certificate for disaster resistance design and compliance of codal provision is endorsed by the structural designer on the structural drawings fit for execution, specially in case of multi - storeyed construction. (iv) The work is being executed as per the approved drawings fit for execution.	
7.	Whether manufacturer test certificate for cement, steel, pipes etc. have been obtained with supply and records are being maintained?	
8.	Whether all mandatory tests of construction material, road work, sanitary work, plumbing work, electrical work and concrete in foundations, beams, columns and slabs etc are carried out at stipulated frequency ?	

9.	Whether regular tests of materials and construction products are being got done from accredited labs also? If yes, details of such labs	
10.	Whether soil investigations of the site proper have been done before the structural design and soil parameters have been accounted for in the structural design/ drawings? If yes, attach copy of soil investigation report.	
11.	Whether centring /shuttering is checked for staging & propping, line & level, dimensions, cleaning etc. and its quality approved before each stage and record maintained	
12.	Specific control on RCC work like: mixing by full bag capacity hopper fed mixer, control of slump, placing/ compaction with vibrator. (proportioning with boxes not permitted)	
13.	Whether cement register is maintained and checked at site. Comment on method of stacking.	
14.	Whether concrete mix is nominal or design mix? (Nominal mix not permitted for quality Concrete).	
15.	What is the Mode of Concrete mixing (batch mix/ manual)? In case of manual mixing, whether mixing is by weight or by volume of ingredients? (Volumetric mixing not permitted).	
16.	Whether Mixer/Vibrator as specified is available at site with adequate means to run them during concreting ?	

17.	Whether RMC is being used in work? If yes, detail of control and checks done at plant site. Comment on Quality of aggregates ,Slump test, Cube test etc.	
18.	Suitability of water for construction i. What is the source of water ii. Has water been tested and approved by Engineer-in-charge before construction iii. Has water been tested subsequently as per Requirement	
19.	Quality of work and workmanship, Comments on i. RCC work (concrete, Reinforcement detailing, cover to reinforcement). Whether Columns are in plumb (check for verticality). ii. Masonry (Joint details, verticality). Check adequate RCC bands are provided. iii. Shuttering (Type of material -pucca/ katcha, support spacing) iv. Bar bending and stirrups bending , placement and cover to reinforcement bars. v. Plastering vi. Doors and windows vii. Seepage, if any viii. Cracks, if any ix. Honey combing, if any	

	x. Any other	
20.	Whether floor slope (especially) in bath, WC, kitchen, terrace and balcony etc. are proper?	
21.	Whether dampness/leakages noticed? If yes, state location and probable reasons.	
22.	Whether remedial measures are undertaken by IA/ ULB to stop Dampness & Leakages? if any.	
23.	Whether Service lines(Electrical, Plumbing, Others) if any, provided before commencement of concrete?	
24.	Whether disaster resistant features have been incorporated?	
25.	Whether precautions taken for dewatering and protecting site from flooding as applicable?	
26.	Whether sample units/items are completed and approved bycompetent ULB official / CLTC member before start of mass finishing work?	
27.	Whether Adequate plinth height (above the general ground level) is provided to the ground floor of the building to avoid possibility of rainwater and reptiles in the building.	
28.	Comments on tests already done but not found satisfactory (specify action to be taken)	
29.	Frequency of visit by SLNA/ULB officials and SLTC/CLTC member	
30.	Any other comments	

31.	Overall assessment of quality (in view of structural stability, non-structural work and workmanship) * video/photographs of the ongoing works maintained by ULB/Implementation Agency may be referred as the case may be.	

4. Need for Quality Assurance System in Real Estate

Homebuyers often invest a significant portion of their life savings when purchasing a home, making the quality of home a matter of paramount importance. While Real Estate (Regulation and Development) Act 2016 provides for a defect liability period of five years, during which any structural defect or any other defect in workmanship, quality or provision of services must be rectified by the developer within thirty days or adequate compensation provided, MahaRERA (Maharashtra Real Estate Regulatory Authority) proposes to take a forward-thinking approach to quality assurance in construction.

MahaRERA's proposes proactive quality assurance as the primary objective. This means that the focus should be on preventing defects from arising in the first place, thus avoiding the need for costly rework. By ensuring high standards of material quality and workmanship during the construction process, real estate projects can be constructed to be defect-free and adhere to stringent quality standards.

In essence, MahaRERA recognizes that the best way to protect the interests of homebuyers is not just to provide remedies for defects after the fact but to establish processes and standards that minimize the likelihood of defects occurring in the first place. This proactive stance not only benefits homebuyers by delivering high-quality homes but also contributes to the overall sustainability and reputation of the real estate industry. It underscores the importance of quality assurance as a preventive measure rather than merely a reactive one, ultimately enhancing the trust and confidence of homebuyers in the real estate market.

5. Proposal

Quality of a real estate project is determined by several key factors, including input materials, the skill of the workforce, and the processes applied throughout construction and development. These three elements are interconnected and play pivotal roles in ensuring the overall quality of the project. Even with quality input materials, if there is poor workmanship in using the materials due to lack of skill or deficient processes, the quality will suffer. Similarly, even great artists using best processes can't make gold out of dust. These factors are interconnected and must be carefully managed by developers to deliver properties that meet or exceed the expectations of homebuyers while adhering to industry standards and safety regulations.

Some of the challenges encountered by allottees upon transitioning to new residences that significantly dampen their experience include:

- Wall: Cracks, Hollowness, Dampness / Moisture / Seepage / Leakage, Presence of salt (efflorescence), Straightness issues, Unevenness of surface, Inconsistency of color, Improper finishing of edges, Patchiness in surface, Flaking or peeling of finishing material, algae and mould deposition on walls, Waterproofing, Undulation, rectangularity , Packing around drain pipes, etc
- Ceiling: Cracks, Unevenness of surface, Dampness / Moisture / Seepage / Leakage, Inconsistency of color, Improper finishing, Patchiness, Not Stable, Inaccessibility inside false ceiling, Not smooth, Not Level, etc
- Floor: Cracks & damages, Hollowness, Improper joints & joint filling, Improper slope, Uneven surface, Dampness / Moisture / Seepage / Leakage, Gaps between skirting and floor surface, Chipping, Color Variations, etc
- Door: Not stable, Line & level issues, functionality, quality of the material, Improper installation, Air gaps, Finishing, Evenness, Suitability of the type of door, Longevity issues, Stability against external forces, Damages to peripheral components due to external pressure, damages caused by moistures and other agents, Gap between door sill and panel of entrance door, Hinges, Handles, Locking system, Tower-bolts, etc
- Window: Stability, Accessibility, Water resistance, Functionality, Quality of the material, Installation, Finishing, Evenness, Suitability of the type of window, inadequately sealed,

Slope at window sill / chajja , Drip mould at window chajja , gap at window frame and sill, weather / rubber gaskets, glass pane locking system, water drainage, etc.

- Plumbing: Leakage, Water pressure, Installation of fittings, Functionality, leaks, Drain, waste and vent system, Improper Slope, pipeline installation considering its longevity and maintenance issues. Safety issues, Water pocket, etc
- Electrical: Distribution Board, Switch Boards, MCB / RCCB / MCCB / Isolator, Wire gauges, plug points, adding switches difficult, Boards coming out of the walls, Fittings, Switches / boards of low quality & not installed properly, Short circuits, wiring inferior, insufficient power points, Earthing missing, Repeated power fault in flats, Safety Issues, Rust, Switch board positions, Colour code, etc.

The aforesaid list is indicative and not exhaustive.

Hence, it is crucial to take proactive measures to prevent these issues, ensuring that allottees do not encounter negative experiences. Therefore, MahaRERA advocates for a proactive strategy of Third Party Quality Monitoring that aims to guarantee construction quality right from the outset, rather than addressing costly, time-consuming, and distressing defects after the fact.

5.1. Need for Third Party Quality Monitoring Mechanism

Real Estate Sector is a highly fragmented industry. Development of Real Estate Projects is a complex orchestration involving many subcontractors, consultants and their employees each focusing on different aspects of the house independently. Coordination and communication between these entities become challenging due to their independent operations. A promoter may engage 10-20 subcontractors or more, including specialists for diverse deliverables from casting to concrete to security and entertainment systems, leading to potential miscommunication. The multitude of suppliers for building materials further adds to the complexity.

Given the intricate nature of home construction, the coordination and communication within the building team are critical yet difficult. Subcontractors working on one aspect of the house may inadvertently impact another, creating a complex management process. With multiple activities occurring simultaneously, promoters may find it nearly impossible to thoroughly check all phases and aspects of construction.

The home purchase is the largest investment that most people make. Buying a new home is an exciting and challenging experience.

Considering that a home purchase is a significant investment, it is imperative to ensure that allottees are confident in the early identification and correction of quality issues before the final finish. Implementing Third Party Inspections at different stages : i.e. advanced stage, and after construction completion, i.e., finishing stage allows promoters to address issues before the project is handed over to allottees – which can save them time and money on repair and maintenance. Issues found can be fixed before finishing a new home easily. Defects can be repaired before they result in serious consequences or costly damage.

Therefore, it is proposed to introduce Third Party Quality Inspection Mechanism to ensure a thorough assessment of construction quality.

5.2. Stages & Scope of Inspection

It is proposed that Third Party Quality Inspection should be carried out in three stages:

(i) Advanced Stages of Construction
(ii) Pre-Handover / Pre-Delivery of Housing
(iii) Verification of rectification of issues

(i) Advanced Stages of Construction

In the first stage, Inspection shall be undertaken when

- Sub-Structure work is complete (Foundation, Short Column, Grade Beam, Ground Floor, etc.)
  and followed by when
- Super Structure work is mostly complete (Columns / Walls / Beam and Slab / Staircase / Parapet, etc.) without MEP in place

The following inspection shall be undertaken:

- Integral inspection of masonry & plumbing issues.
- Adequate curing for brickwork & brickwork workmanship
- Identifying the possible weak area where crack or other issue may come.

- Checking of the surface for dampness or water seepage.
- Checking for loose/hollow plaster in the wall
- Presence of salt (efflorescence)
- Line, level & Plumb of walls
- Visual inspection and identifying any weak spot, possible maintenance issues.
- Clamping, support & other related issues of plumbing pipes / installation
- Line & level & other matters of electric installation / points / boards.
- Dimension for opening of doors & windows,
- Fastener of door frame type & installation
- Other related construction issues

During this phase, the Promoter shall also make available various test reports and registers undertaken by them, to the inspectors including:

- Declaration of whether Site Laboratory is available and test facilities available therein
- Offsite test laboratories and reports being obtained
- Various test reports and registers

(ii) Pre-Handover / Pre-Delivery Inspection

This inspection shall be done when MEP is ready, and Apartments are ready for Handover.

The apartment inspection coverage will typically include the following:

1 **Areas:** Areas Inspected will normally Include Interior Living Space (Bedrooms | Living | Dining | Hall Areas | Alleys, etc), Bathrooms, Kitchens, Lofts, Balconies, etc.

2 **Elements:** Systems & Components Inspected will normally include Ceilings / Walls / Floors / Doors / Windows / Stair steps / Stair railing / Cabinets and countertops, Electrical system, Plumbing system and fixtures, Exhaust systems, etc. The indicative list of potential issues that will be inspected are detailed in Section 5.

3 **Scope:** Inspection scope will include:
   a. Specifications mapping,
   b. Installation & finishing,
   c. Operational & functionality
   d. Safety Issues

4 **Inspection of Common Areas** (Floor Lobbies / Roof / Ground Floor, Club, Gates, Basement, etc)

5 A declaration on any non-destructive tests that may have been carried out and results thereof.

6 Declaration on carrying out of ponding tests in toilets and other wet areas

(iii) Verification of rectification of issues

Once the issues highlighted by Third Party Quality Inspection Agency have been dealt & rectified by relevant project teams / contractors, the third-party Inspection Agency will do a verification report on the status of the rectification done to ensure that all the issues have been rectified in line with the rectification memo.

5.3. Deliverables

The following indicative deliverables are proposed for the Third Party Quality Inspection Agencies:

- Building wise Advanced Construction stage (Phase 1) Inspection reports
- Building wise Finishing stage (Phase 2) Inspection reports
- Observations based on function-wise, vendors / contractor wise to facilitate easy rectifications
- Common Area inspection reports
- Verification inspection reports of rectification done.
- MIS / Tracker of Inspection Status

It is proposed that the Final Report of the Third Party Quality Inspection Agencies shall be submitted online for Allottee's information.

5.4. Phases of Implementation

The suggested approach involves MahaRERA establishing an approved list of Third-Party Quality Inspection Agencies for conducting necessary inspections. This process of empanelment will be conducted through a transparent Tendering Process, with inputs from Promoter Associations and Allottee Associations considered in developing the Request for Proposal (RFP). Empanelment criteria will focus on the technical strength of the organization, while financial considerations will be subject to market forces.

Initially, this initiative will be advisory/ optional for all projects. Those projects opting for this initiative will be prominently featured on the MahaRERA website, ensuring that prospective allottees are informed during their decision-making process.

As the ecosystem develops and matures, the Third-Party Quality Inspection initiative is envisioned to transition into a mandatory requirement for all real estate projects. This evolution will contribute significantly during the Defect Liability Period, facilitating a clearer understanding of whether defects arise from mishandling by allottees or inherent issues with the promoter's workmanship. This phased approach aims to enhance transparency, accountability, and overall quality assurance in the real estate sector.

6. Public Comments

Public comments are invited for the proposals given above. The comments / suggestions may be provided as per the format given below:

Name of the Person / Entity Proposing comments:	
Name of the Organisation (if applicable):	
Contact details:	
Category: Whether Promoter / Real Estate Agent / Allottee / Government Authority / Academic Institutions / Legal Firms / Public etc.	

S.No	Para. No of Consultation Paper	Extract from Consultation Paper	Comments / Suggestions	Rationale

Kindly mention the subject of communication as “Consultation Paper on Framework for Quality Assurance in Real Estate Projects”.

Comments as per aforesaid format may be sent , latest by 31st December 2023, by email to suggestions.maharera@gmail.com