

FUNCTIONAL REQUIREMENT DOCUMENT (FRD)

Project Name: Transparent Construction & Home Services Platform

Version: 1.0

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1. PURPOSE OF THIS DOCUMENT

This FRD defines what the system must do to meet business objectives. It translates business requirements into clear, testable functional requirements for product, engineering, and QA teams.

2. SCOPE OF THE FRD

2.1 In Scope

- **User Management:** Separate registration and profile management modules for Customers, Service Providers (Workers), and Ops Admins.
- **Estimation Engine:** A logic-based tool to calculate project costs based on user-selected items and the city-wise Rate Card database.
- **Real-time Tracking:** GPS-based check-in/check-out for workers and a dashboard for customers to track job status.
- **Payment Gateway Integration:** Support for Escrow-style payments, milestone releases, and digital invoice generation.
- **Media Handling:** Ability to upload, store, and display "Before/After" high-resolution photos for validation.

2.2 Out of Scope

- **Third-party Design Integration:** No API connections to architectural software like AutoCAD or Revit.
- **Offline Mode:** The application will require an active internet connection; no offline data syncing in Phase 1.
- **Predictive AI:** No AI-based cost forecasting or automated resource allocation (this will be manual/admin-driven for now).
- **Multi-currency Support:** The system will strictly support INR for the initial launch.

3. ACTORS (SYSTEM USERS)

Actor	Description
Customer	Homeowner requesting services
Worker	Skilled service provider
Supervisor	On-ground quality controller
Ops Admin	Platform operations user
System	Automated platform processes

4. FUNCTIONAL REQUIREMENTS

4.1 CUSTOMER MODULE

FR-1: User Registration & Profile

- System shall allow customers to register using mobile number
- System shall store customer city and address
- System shall maintain job history per customer

FR-2: Service Selection

- System shall display available services based on city
- System shall allow customer to select service type
- System shall restrict services not available in the city

FR-3: Requirement Capture

- System shall capture inputs such as:
- Service type
- Area/quantity
- Property type
- System shall map inputs to a standard scope template

FR-4: Estimate & BOQ Generation

- System shall auto-generate BOQ based on scope
- BOQ shall include:
 - Item name
 - Quantity
 - Unit rate
 - Total cost
- System shall show material and labour breakup separately
- System shall calculate total estimated cost

FR-5: Estimate Confirmation

- System shall allow customer to:
- Accept estimate
- Reject estimate
- No job shall be created without estimate approval

FR-6: Escrow Payment

- System shall collect payment into escrow
- System shall lock funds until milestone completion
- System shall display escrow status to customer

FR-7: Job Tracking

- System shall display:
 - a. Job status
 - b. Assigned team
 - c. Timeline
- System shall notify customer on status changes

FR-8: Work Approval

- System shall allow customer to:
- View photos and checklist
- Approve milestone
- Raise dispute

FR-9: Ratings & Feedback

- System shall collect customer ratings after job completion
- Ratings shall impact worker performance scores

4.2 WORKER MODULE

FR-10: Worker Profile

- System shall store:
 - a. Skill type
 - b. Certification level
 - c. City
- System shall track worker performance metrics

FR-11: Job Assignment

- System shall assign jobs based on:
 - a. Skill match
 - b. Availability
 - c. City
- Worker shall accept or decline jobs

FR-12: Task Checklist

- System shall provide task-level checklist per job
- Worker shall mark tasks complete

FR-13: Photo Documentation

- Worker shall upload:
 - a. Before photos
 - b. After photos

- c. Photos shall be mandatory for milestone completion

FR-14: Milestone Completion

- Worker shall submit milestone completion
- System shall notify supervisor/customer

4.3 SUPERVISOR MODULE

FR-15: Quality Verification

- Supervisor shall review:
 - a. BOQ compliance
 - b. Photos
 - c. Checklist
 - d. Supervisor shall approve or reject milestones

FR-16: Change Request Initiation

- Supervisor shall initiate BOQ change requests
- System shall block execution until approval

4.4 CHANGE MANAGEMENT (STRICT BOQ ENFORCEMENT)

FR-17: Change Request Creation

- System shall allow creation of additional BOQ items
- Each change shall include:
 - a. Reason
 - b. Cost impact
 - c. Timeline impact

FR-18: Customer Approval for Changes

- System shall notify customer of changes
- System shall require explicit approval
- No work shall proceed without approval

4.5 OPERATIONS MODULE

FR-19: Job Monitoring Dashboard

- Ops shall view all active jobs
- System shall flag:
 - a. Delays
 - b. Cost overruns
 - c. Disputes

FR-20: Dispute Resolution

- Ops shall access:
 - a. BOQ

- b. Photos
- c. Approvals
- d. Ops shall record resolution outcome

FR-21: Payment Release

- System shall release escrow payment only after:
 - a. Milestone approval
 - b. No active disputes

4.6 SYSTEM RULES & CONTROLS

FR-22: BOQ Locking

- System shall lock BOQ post-approval
- Edits allowed only via change request flow

FR-23: Audit Trail

- System shall maintain logs for:
 - a. Cost changes
 - b. Approvals
 - c. Payments

5. NON-FUNCTIONAL REQUIREMENTS

Category	Description
Performance	The Estimation Engine must generate a BOQ in less than 2 seconds after input submission.
Availability	The system shall maintain 99.5% uptime to ensure Workers can check in/out on-site
Compatibility	The mobile interface must be fully functional on Android 10+ and iOS 14+ to accommodate varied worker devices
Data Privacy	All customer addresses and contact numbers must be masked from Workers until a job is officially accepted.
Localization	The system must support English and Hindi languages for the Worker and Supervisor modules.

6. DEPENDENCIES

- City-wise rate cards
- Training & SOPs for workers
- Payment gateway supporting escrow

7. Assumptions

- Partial milestone approvals.
- Cancellation penalties.
- Warranty period tracking.
- AMC handling.