**Functional Requirements**

1. **Project Planning scheduling**

* **Create Project**: The system shall allow authorized users to create a new construction project
* **Project Details:** The system shall allow users to define and save a project's core details, including:
  + Project Name, Client, and Location.
  + Objectives and Milestones.
  + Start Date and End Date.
  + Initial Budget.
* **Task Sequencing:** The system shall provide a feature to organize all project tasks to avoid delays.
* **Project Status:** The system shall support a project Status (e.g., "Draft," "Active").
* **Edit/Update Plan:** The system shall allow authorized users to modify project details during the project phases.
* **View Schedule:** The system shall view timeline that allows managers to track and see the schedule and manage overlapping tasks.
* **Project Kick-Off:** The system shall generate and send a "Kick-Off Notification" to the team once the project status is changed to "Active".

1. **Task management**

* **Task Creation:** The system shall allow Project Managers to create new tasks, define their dependencies, and set timelines
* **Task Status Tracking:** The system shall allow Site Engineers and Supervisors to track and update the status of their tasks (e.g., "pending," "in progress," "completed").
* **Mobile Task Viewing:** The system shall provide a mobile-friendly interface for site crews to easily view their assigned tasks.
* **Task Notifications:** The system shall send automated notifications to users for new task assignments, updates, or when a task is delayed.
* **Log Work Hours:** The system shall allow a Construction Supervisor to log work hours for their crew against specific tasks.
* **Task Templates:** The system shall support the use of reusable task templates for common project types (e.g., residential vs. commercial)

1. **Resource allocation**
   * **Resource Management:** The system shall allow authorized users to manage and monitor the allocation and usage of key resources, including materials, equipment, and labor.
   * **Resource Request:** The system shall allow a Construction Supervisor to submit a request for daily resource needs (e.g., requesting materials).
   * **Resource Usage Tracking:** The system shall allow users to track and log the consumption of resources (e.g., "how much cement was used") to support cost control.
   * **Low-Resource Alerts:** The system shall be capable of sending automated alerts to managers when a tracked resource is running low.
   * **Priority-Based Allocation:** The system shall allow a Project Manager to adjust resource allocation based on project priority.
   * **Budget-to-Cost-Code Allocation:** During project setup, the system shall allow a Project Manager to allocate the initial budget to specific cost codes.
2. **Communication and collaboration**
   * **Central Announcement Board:** The system shall provide a central announcement board to facilitate real-time communication between the main office and job sites.
   * **Daily Report Notifications:** The system shall automatically notify a Project Manager when a new Daily Progress Report is submitted by a Site Engineer.
   * **Project Kick-Off Notifications:** The system shall automatically generate and send detailed kick-off notifications to the entire team once a project is made "Active".
   * **Revision Notifications:** The system shall notify a Site Engineer when a Project Manager has sent a report back for revision.
   * **Client Progress View:** The system shall provide a simplified, high-level view for external stakeholders (like the Client) to see project progress and photos.
3. **Document Management**

* **Secure Repository:** The system shall provide a secure, centralized repository for storing essential project documents.
* **Document Upload:** The system shall allow authorized users to upload project documents, including blueprints, contracts, permits , and initial key documents.
* **Document Organization:** The system shall allow a Project Manager to organize documents into folders during the project setup phase.
* **Photo Attachment:** The system shall allow a Site Engineer to attach progress photos when submitting a Daily Progress Report.
* **Document Access:** The system shall allow team members to quickly access and view project documents relevant to their role.
* **Client View:** The system shall allow a Client to view project progress photos through their simplified, high-level interface.

**Requirement Elicitation Techniques**

To define the system's requirements, we employed a multi-faceted elicitation strategy targeting our key users. The process began with **Stakeholder Identification**, where we classified stakeholders into four categories (Internal/External and Operational/Executive) to understand their specific interests and level of interaction with the system.

Following this analysis, our primary data collection method was **Semi-Structured Interviews**. We prepared two different interview agendas:

* One for **Internal Operational Stakeholders** (like Site Engineers) to map their daily workflows and identify on-site inefficiencies.
* One for **Internal Executive Stakeholders** (like Project Managers) to align the system with strategic goals, identify KPIs, and define high-level reporting needs.

To supplement the interviews with quantitative data, we designed **Questionnaires** for a broader group of **Operational Users**. These surveys used multiple-choice and agreement-scale questions to measure the frequency of common problems, such as work delays and document versioning issues, which helped validate the need for our core features.