

# Project Design Phase

## Proposed Solution Template

Date	18 February 2026
Team ID	LTVIP2025TMID42151
Project Name	Advancing Nutrition Science Through Gemini AI
Maximum Marks	2 Marks

**Proposed Solution Template:**

Project team shall fill the following information in the proposed solution template.

S.No.	Parameter	Description
1	<b>Problem Statement</b>	Manual construction site auditing and material counting (like rebar or bricks) are slow, labor-intensive, and prone to human error, leading to project delays and inaccurate inventory logs.
2	<b>Idea / Solution Description</b>	An AI-powered web dashboard that allows engineers to upload site images. Using the <b>Google Gemini 2.5 Flash API</b> , the system performs "Visual Reasoning" to automatically identify structural members, count materials, and generate technical audit reports.
3	<b>Novelty / Uniqueness</b>	Unlike standard digital logbooks, this solution uses <b>Multimodal LLMs</b> to "see" and interpret complex construction skeletons, providing technical insights and inventory data from a single photo without specialized hardware.
4	<b>Social Impact / Customer Satisfaction</b>	Increases site safety by ensuring structural members match design specs and significantly reduces the 4-5 hours typically spent on manual counting, leading to higher engineer job satisfaction and faster project completion.
5	<b>Business Model</b>	A <b>SaaS (Software as a Service)</b> model with tiered subscription levels for construction firms based on the number of site projects or active monthly users.
6	<b>Scalability of the Solution</b>	The cloud-based architecture (using <b>Streamlit</b> and <b>GCP</b> ) allows the tool to support multiple concurrent site audits globally. Its decoupled design ensures that as more users join, the heavy AI processing is handled independently by the API.