Project Design Phase-II
Solution Requirements (Functional & Non-functional)

Date	02 February 2026
Team ID	LTVIP2026TMIDS66241
Project Name	Civil Engineering Insight studio
Maximum Marks	4 Marks

Functional Requirements:

Following are the functional requirements of the proposed solution.

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	Project Input Module	Enter Project/ topic Select analysis type
FR-2	Input Validation	Validate empty input Validate file format
FR-3	AI Integration	Connect to Gemini Flash Lite API Send structured prompt to model process user queries
FR-4	Analysis & Report Generation	Generate structured engineering report Include Introduction,Methodology,Calculations, results
FR-5	Output Display	Display generated report in UI Allow user to copy content
FR-6	Additional Feature	Generate civil engineering tips / insights (optional feature)

Non-functional Requirements:

Following are the non-functional requirements of the proposed solution.

FR No.	Non-Functional Requirement	Description
NFR-1	Usability	The application must have a simple and intuitive Streamlit interface that is easy to use.
NFR-2	Security	API keys must be securely stored and not exposed in the frontend.
NFR-3	Reliability	The system should generate consistent and structured outputs for valid inputs.
NFR-4	Performance	Report generation should complete within a few seconds.
NFR-5	Availability	The application should handle multiple users simultaneously without performance degradation.
NFR-6	Scalability	The system should handle multiple users without significant performance degradation.