# Project Planning Phase
## Project Planning (Product Backlog, Sprint Planning, Stories, Story points)

| Date | 11 February 2026 |
|------|------------------|
| Team ID | LTVIP2026TMIDS62350 |
| Project Name | Civil Engineering Insight Studio |
| Maximum Marks | 5 Marks |

**Product Backlog, Sprint Schedule, and Estimation (4 Marks)**

Use the below template to create product backlog and sprint schedule

| Sprint | Functional Requirement (Epic) | User Story Number | User Story / Task | Story Points | Priority | Team Members |
|--------|-------------------------------|-------------------|-------------------|--------------|----------|--------------|
| Sprint-1 | User Interface Development | USN-1 | Design Streamlit layout and image upload section | 2 | High | Frontend Dev |
| Sprint-1 | User Interface Development | USN-2 | Implement structural analysis input field | 1 | High | Frontend Dev |
| Sprint-1 | User Interface Development | USN-3 | Display uploaded construction image preview | 2 | High | Frontend Dev |
| Sprint-1 | AI Integration | USN-4 | Integrate Google Gemini Vision API | 5 | High | AI Dev |
| Sprint-1 | AI Integration | USN-5 | Create structured engineering prompt template | 3 | High | AI Dev |
| Sprint-1 | AI Integration | USN-6 | Display generated structural report in UI | 3 | High | Full Stack Dev |
| Sprint-2 | Report Formatting | USN-7 | Format output into structured engineering sections | 3 | Medium | Backend Dev |
| Sprint-2 | Report Export | USN-8 | Implement optional report download functionality | 3 | High | Backend Dev |

| Sprint-2 | User Experience Enhancement | USN-9 | Add loading indicator during AI analysis | 2 | Medium | Frontend Dev |
| Sprint-2 | System Reliability | USN-10 | Implement input validation and error handling | 3 | High | Full Stack Dev |
| Sprint-2 | Testing & Deployment | USN-11 | Perform functional testing and local deployment | 3 | High | Full Stack Dev |

**Project Tracker, Velocity & Burndown Chart: (4 Marks)**

| Sprint | Total Story Points | Duration | Sprint Start Date | Sprint End Date (Planned) | Story Points Completed (as on Planned End Date) | Sprint Release Date (Actual) |
|---|---|---|---|---|---|---|
| Sprint-1 | 16 | 7 Days | 01 Feb 2026 | 07 Feb 2026 | 16 | 07 Feb 2026 |
| Sprint-2 | 14 | 7 Days | 08 Feb 2026 | 14 Feb 2026 | 14 | 14 Feb 2026 |

**Velocity:**
Imagine we have a 10-day sprint duration, and the velocity of the team is 20 (points per sprint). Let's calculate the team's average velocity (AV) per iteration unit (story points per day)

$$AV = \frac{sprint\ duration}{velocity} = \frac{20}{10} = 2$$

Total Story Points Completed = 16 + 14 = 30
Number of Sprints = 2

Velocity = 30 / 2

**Velocity = 15 Story Points per Sprint**

**Burndown Chart:**

A burn down chart is a graphical representation of work left to do versus time. It is often used in agile software development methodologies such as Scrum. However, burn down charts can be applied to any project containing measurable progress over time.