Sprint 1

Epic 1: User Interface Development

This epic focused on building the Streamlit-based web interface for civil engineers to upload images and request structural analysis.

- USN-1: Designing Streamlit layout and image upload section (2 Story Points)

- USN-2: Implementing structural analysis request input field (1 Story Point)

- USN-3: Creating preview display for uploaded construction image (2 Story Points)

- USN-4: Designing structured report display section (2 Story Points)

Total for Epic 1: 7 Story Points.

Epic 2: Core AI Integration

This epic handled integration with Google Gemini Vision API for AI-powered structural analysis.

- USN-5: Integrating Google Gemini Vision API (5 Story Points)

- USN-6: Designing structured engineering prompt template (3 Story Points)

- USN-7: Handling API response and formatting engineering output (3 Story Points)

Total for Epic 2: 11 Story Points.

Total Story Points in Sprint 1: 7 + 11 = 18 Story Points.

Sprint 2

Epic 3: Report Formatting & Enhancement

This epic focused on improving structured engineering documentation format.

- USN-8: Enhancing structured output sections (Structure Type, Materials, Components, Observations) (3 Story Points)

- USN-9: Implementing optional report download feature (PDF/Markdown – future scope) (3 Story Points)

- USN-10: Implementing session state storage (2 Story Points)

Total for Epic 3: 8 Story Points.

Epic 4: User Experience & Validation

This epic improved usability, validation, and system robustness.

- USN-11: Adding loading indicator during AI analysis (2 Story Points)

- USN-12: Implementing input validation for image and text fields (2 Story Points)

- USN-13: Implementing error handling for API failures (3 Story Points)

Total for Epic 4: 7 Story Points.

Epic 5: Testing & Deployment

This epic ensured reliability, performance, and deployment readiness.

- USN-14: Functional testing of structural analysis workflow (3 Story Points)

- USN-15: Local deployment and documentation setup (2 Story Points)

Total for Epic 5: 5 Story Points.

Total Story Points in Sprint 2: 8 + 7 + 5 = 20 Story Points.

Overall Calculation

Total Story Points Completed = 18 + 20 = 38

Number of Sprints = 2

Velocity = Total Story Points / Number of Sprints

Velocity = 38 / 2

Velocity = 19 Story Points per Sprint