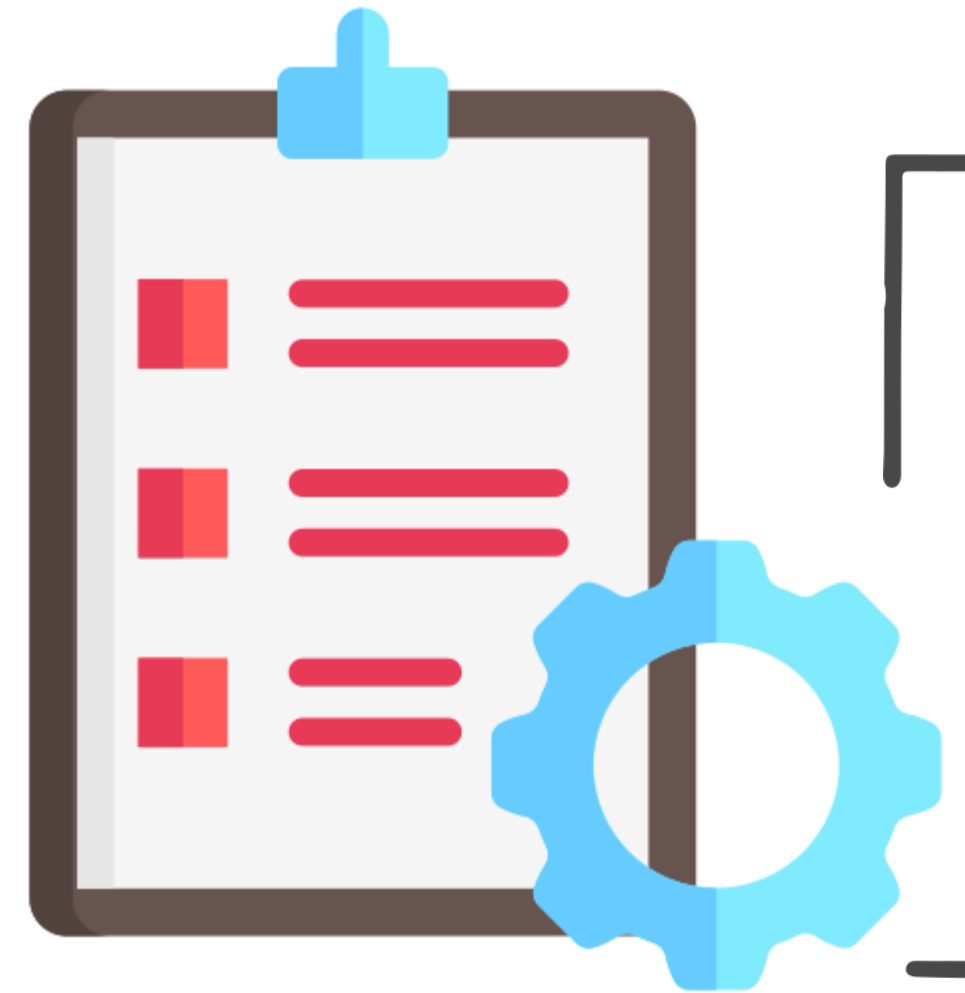


Case Study: BYGGCON Project

A digital solution for registering and managing the condition of
large buildings

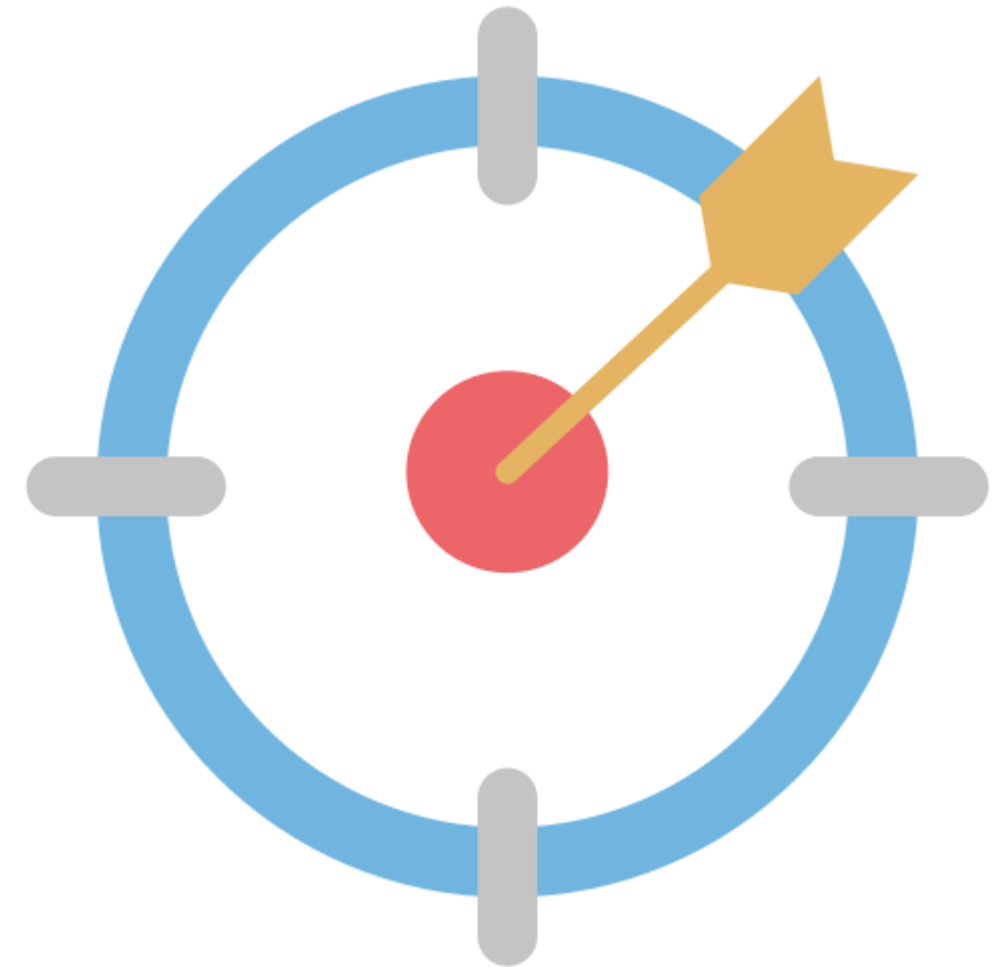
Project Overview

- ❖ The Building Condition Assessment Portal is a web-based system designed for engineering firms to register, monitor, and report on the condition of residential, commercial, and industrial buildings.
- ❖ It provides a centralized, structured way to document the physical state of buildings and generate detailed condition assessment reports.



Project Objective

- ❖ Simplify the process of assessing and recording building conditions.
- ❖ Enable digital documentation with structured data input for each building component.
- ❖ Replace manual reporting with an automated PDF generation system.
- ❖ Improve transparency, traceability, and report consistency.



Problem Statement

- ❖ Manual building inspection and report preparation are time-consuming and inconsistent.
- ❖ There was a need for a **standardized, automated solution** to register building components, assess their condition, and produce clear, data-driven reports.



Proposed Solution

- ❖ A responsive, user-friendly online portal that automates the entire inspection process — from registering buildings and components to generating PDF reports.
- ❖ The system supports multiple user roles, ensures secure data management, and streamlines workflow from inspection to report delivery.



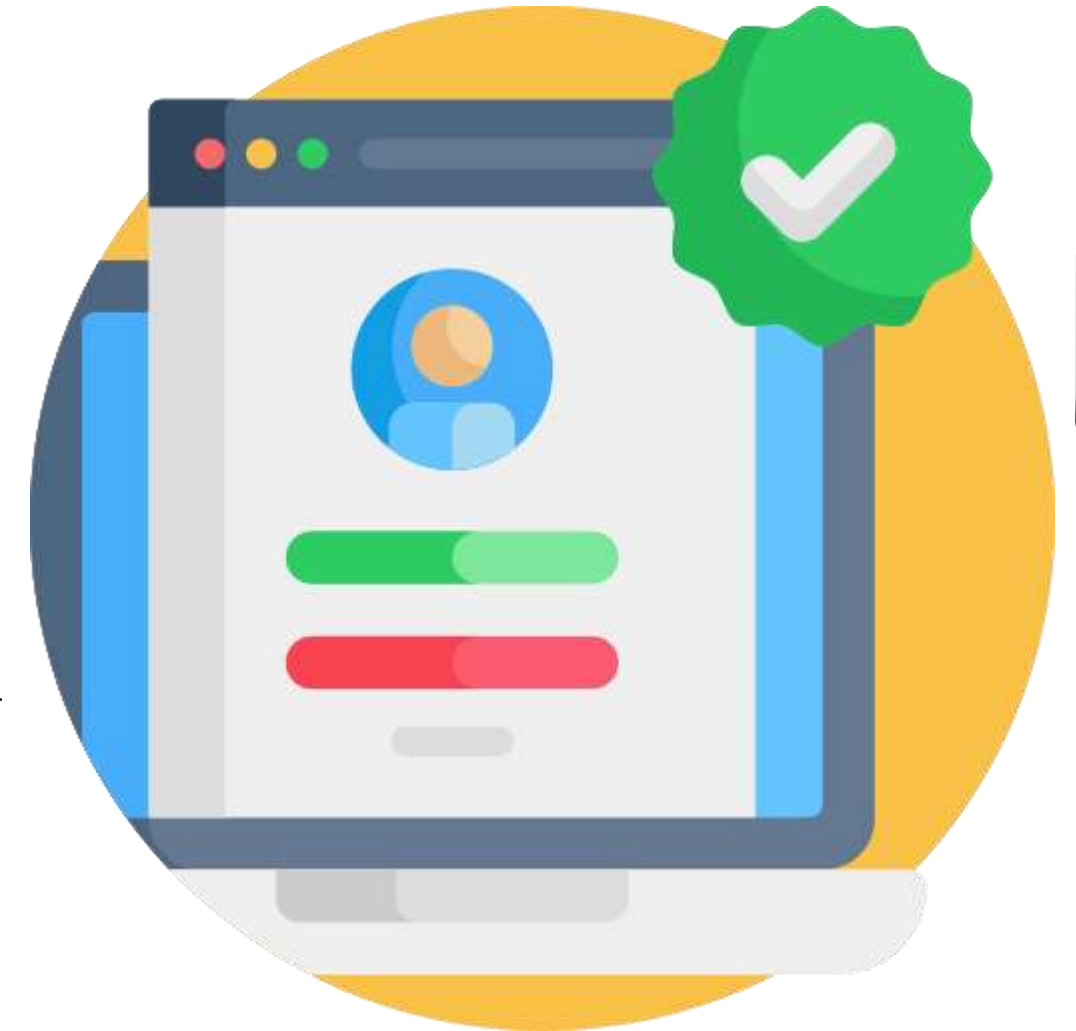
Technologies Used

- ❖ **Backend:** CodeIgniter (PHP Framework)
- ❖ **Database:** MySQL
- ❖ **Frontend:** HTML, CSS, JavaScript, Bootstrap
- ❖ **Reporting:** Dynamic PDF Generation



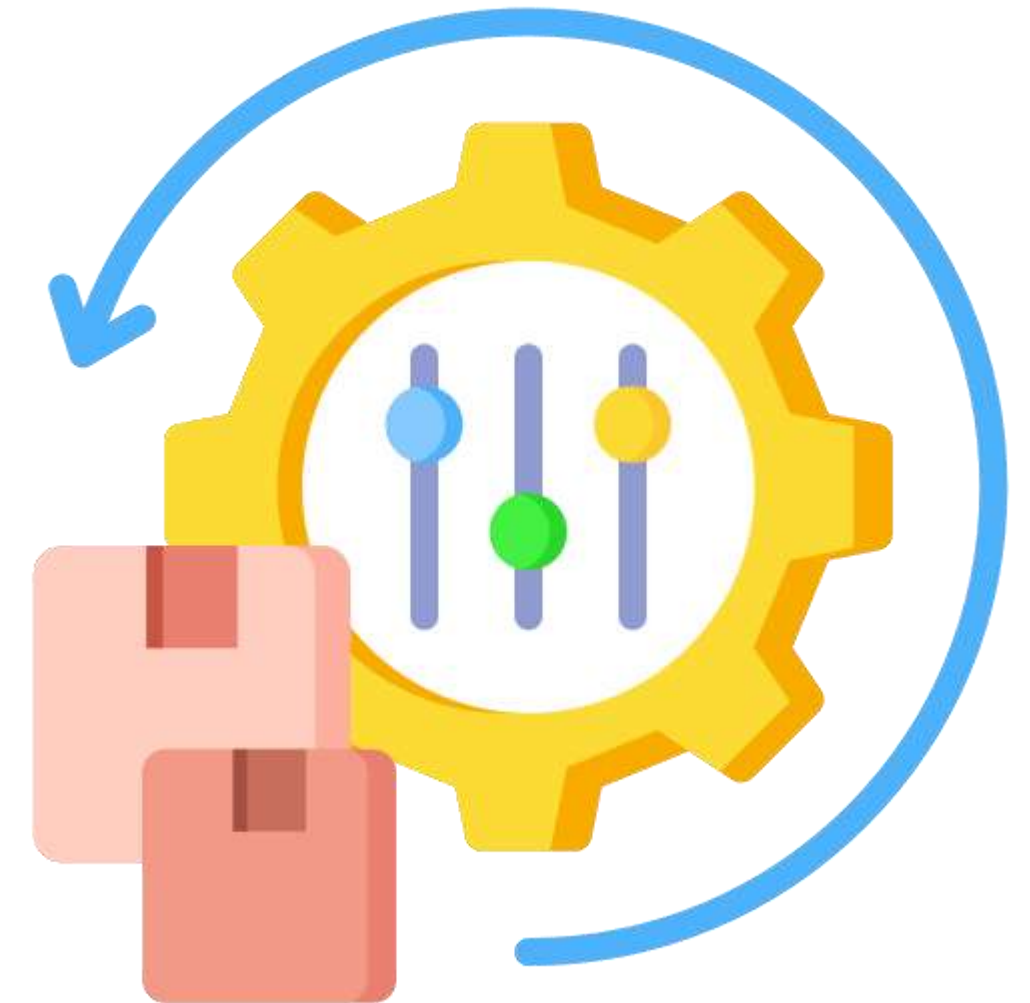
System Users & Roles

- ❖ **Admin:** Manages companies, employees, and reports.
- ❖ **Customer:** Engineering company that registers properties and assigns employees.
- ❖ **Employee:** Performs inspections, uploads photos, and creates reports.
- ❖ **End User:** Building owner or client who receives the assessment report.



Core Features

- ❖ Register building details (type, area, units, and address).
- ❖ Grade each component's condition and consequence (0–3 scale).
- ❖ Add descriptions, comments, and repair suggestions.
- ❖ Upload multiple photos and documents.
- ❖ Auto-generate detailed PDF reports with costs and summaries.



System Architecture

- ❖ Follows **MVC (Model–View–Controller)** pattern for scalability.
- ❖ Centralized MySQL database for all records and reports.
- ❖ Secure role-based access and authentication.
- ❖ Optimized responsive interface for desktop and tablet use.



Building Component Classification

- ❖ Based on **NS3451 Standard (Categories 2–7)**.
- ❖ Covers all key systems: structural, electrical, HVAC, and interiors.
- ❖ Guidance text ensures consistency in evaluation.
- ❖ Enables standardized condition assessment across all reports.



Condition Assessment Workflow

- ❖ Inspect building and record each component's data.
- ❖ Assign condition and consequence grades (0–3).
- ❖ Add text notes, images, and cost estimates.
- ❖ Assign repair timelines (0–1, 1–3, 3–5, or 5–10 years).
- ❖ Generate a comprehensive PDF report for the client.



Report Generation

The system automatically compiles all inspection details into a professional report including:

- ❖ Cover page with logo, property, and company details
- ❖ Summary of building conditions
- ❖ Economic cost tables and repair timelines
- ❖ Photos and attachments for reference



Photo & Document Management

- ❖ Upload and tag photos for each building component.
- ❖ Maintain a document archive for easy reference.
- ❖ Link related photos and PDFs to specific projects.
- ❖ Include selected media directly in final reports.



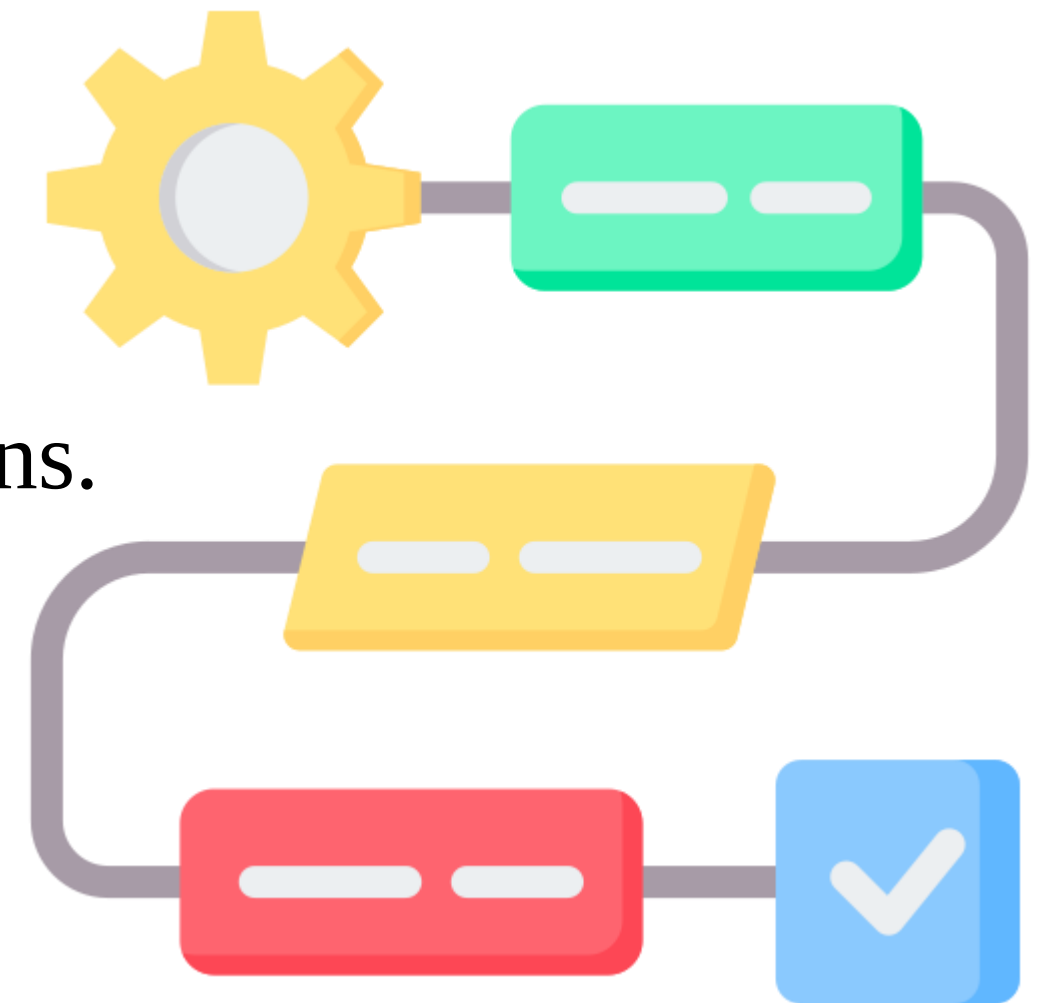
Security & Data Privacy

- ❖ Role-based login and user authentication.
- ❖ Encrypted data storage and secure backups.
- ❖ Access control for sensitive project files.
- ❖ Compliance with data protection and privacy regulations.



Workflow Overview

- ❖ Admin sets up companies and user accounts.
- ❖ Employees register properties and conduct inspections.
- ❖ Condition data and costs are entered and saved.
- ❖ Reports are auto-generated and reviewed.
- ❖ Final PDF is shared with the end user.



Impact and Value Delivered

- ❖ Reduced manual effort and improved data accuracy.
- ❖ Faster, standardized report generation.
- ❖ Enhanced transparency between engineers and clients.
- ❖ Better maintenance planning through organized data.
- ❖ Increased efficiency in multi-project management.



CONCLUSION

- ❖ The Building Condition Assessment Portal modernizes how engineers evaluate and report building conditions.
- ❖ It improves accuracy, efficiency, and consistency across projects — providing a reliable digital solution for professional building assessment and reporting.



