

Building A Powerful Web Application For Quote Automation And CAD Generation

Book a Consultation

SERVICES

Web development, backend development

INDUSTRY

Manufacturing

CLIENT

Custom product manufacturer

TECHNOLOGIES

Ruby on Rails, PostgreSQL, Sidekiq, Bootstrap

QUOTE GENERATION DRAMATICALLY ACCELERATED

7 days→10 min

CAD SUBCONTRACTOR DEPENDENCY REDUCED

Routine tasks automated

CAD drawings

Helping the client streamline the core business process and reduce estimate time from 7 days to 10 minutes with automatically generated

01. Our Client

Our client is a US-based manufacturer of custom flood control systems to protect critical infrastructure and property. Their solutions serve a broad range of clients, including government agencies, businesses, and homeowners. Each system requires precise on-site measurements, which made manual quoting complex and time-consuming. It often took several days and required involving subcontractors for CAD drawings.

To address these challenges, the client decided to develop a custom web-based application that would fully automate the quote-to-invoice process. They turned to Teamvoy, trusting our expertise and consistent, high-quality results from other projects successfully completed together.

02. Challenge

Before this project started, the client’s quoting process was slow and inefficient, often taking up to seven days.

After gathering field measurements, the client’s team was supposed to do all the calculations and estimate quotes manually. Although they used third-party tools like Hubspot, these only supported individual tasks and didn’t streamline the overall process.

Compounding the issue, the client had to pass measurements on to subcontractors, who would then create CAD drawings in Autodesk for each system. This step required additional resources and often caused delays and inconsistencies.

Another key challenge was the disconnect between financial workflows and sales processes. Invoices were created separately by the accounting team, which often resulted in errors and further slowed the deal cycles.

So, initiating the project, the client wanted to:

- Automate the entire quote-to-invoice process, from field measurements to drawing generation and final invoicing.
- Optimize the solution for mobile devices to let field representatives generate quotes on their smartphones and tablets while still on-site.

03. Cooperation

Our collaboration on this project started over a year ago and continues to this day, following a traditional outsourcing model.

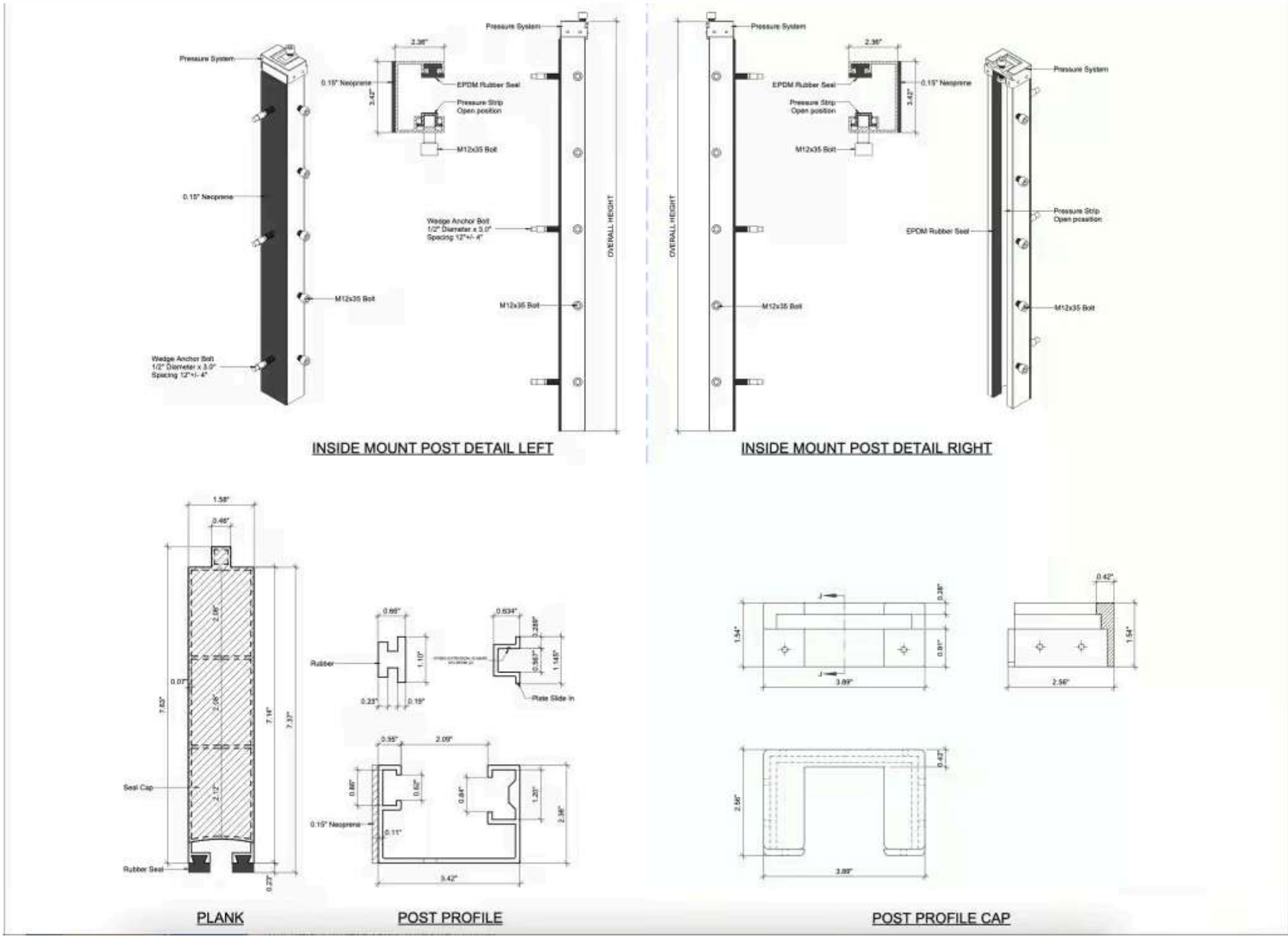
Team

On the client side, the project was led by the company’s founder, with a non-technical product owner handling day-to-day communication. On the Teamvoy side, the team included three professionals: a full-stack developer, a QA specialist, and a project manager.

During the development phase, we followed a standard Scrum process with bi-weekly sprints, each ending in a demo session to ensure continuous feedback and iteration. As the project moved into the support phase, we transitioned to a Kanban approach—establishing escalation protocols for each issue and providing estimates for out-of-scope requests.

Teamvoy’s Role

Teamvoy was fully integrated into every aspect of the project from start to finish, acting as a true technical partner, not just a service provider. We helped the client outline the requirements, created the UI/UX design, handled all coding and testing, and supported DevOps processes. Our team also proactively contributed to key technical decisions. For example, we assisted in finding the optimal solution for CAD integration.



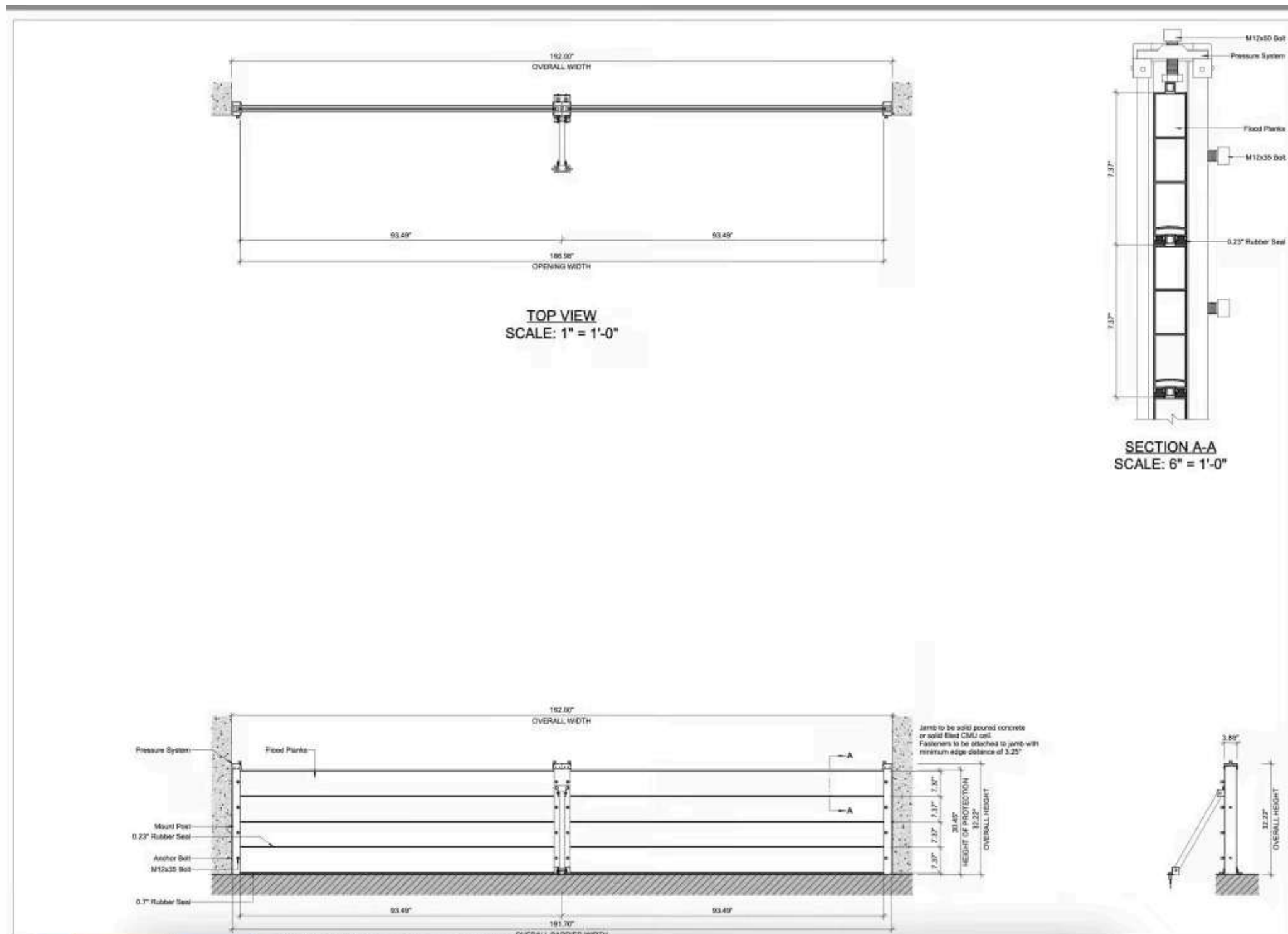
04. Solution

Our team successfully delivered a **robust web application** that fully addresses the client’s business needs. Key functionalities include:

- **Quote estimation.** Users enter measurements into the admin panel, and the application automatically calculates the quote. Integrated with QuickBooks, it factors in all details—including shipping costs—greatly simplifying order management.
- **Auto-generation of CAD drawings.** Powered by a microservice linked to Autodesk Revit, this feature lets users generate CAD drawings with just a few clicks once all the necessary parameters are entered in the estimate. The client no longer has to rely on subcontractors for this task.
- **Invoicing.** The app instantly creates invoices from estimates, and with Stripe integration, payment links are embedded automatically.
- **Emails.** The application automatically sends emails to the client’s team and customers, attaching PDFs with quotes, CAD drawings, and invoices.

What’s more, the web application is fully **optimized for mobile devices**. This means field representatives can generate quotes and CAD drawings directly on-site using their smartphones or tablets.

White-label support is also included: the client can sell the solution to distributors for use under different brands.



05. Results

The web application we created fully automated the client's core business workflow, leading to several major benefits:

- **Faster quote generation.** The app reduced quote generation from 7 days to just under 10 minutes once a user enters data into the admin panel.
- **Increased field sales efficiency and conversion rates.** With the app, field representatives can immediately provide customers with all the necessary information while still on-site. This helps customers make faster, more informed purchasing decisions, leading to improved conversions.
- **Minimized reliance on CAD subcontractors.** The application handles most routine CAD drawing tasks, so the client now relies on subcontractors only for particularly complex, non-standard orders.
- **Business growth and expansion.** The app is built to scale so it can grow as the client's business evolves. What's more, white-label support allows the client to open new revenue streams by selling the solution to distributors.
- **Improved collaboration between teams.** The application centralizes all order and financial information in one place, helping the client's teams work together more efficiently—with fewer bottlenecks and less workflow friction.
- **Cost efficiency.** Processing and managing orders now takes less time and effort, resulting in lower operational costs. The application is easy to maintain, too, keeping support expenses relatively low.

06. Let's Talk!

Use the power of robust technologies to drive better business results, with our high-quality team

Talk to An Expert