



George Hancock
Technical Consultant | Solutions Architect |
ConTech Integration.

Transforming Electrical Operations with an Automation powered CRM

Executive Summary

This project involved the development of a specialized **Customer Relationship Management (CRM)** system tailored for the electrical contracting industry. By moving away from manual data entry and custom coding, the system utilizes **AppSheet Automation Bots** to manage the full project lifecycle—from initial lead and automated quoting to task delegation and final invoicing. The result is a unified platform that synchronizes office administration with field-based execution.

The Challenge: Administrative Friction

Electrical projects require high-precision documentation and constant communication between stakeholders. The manual "hand-off" between these stages often created critical bottlenecks:

- **Quoting Delays:** Manually compiling material costs and technical descriptions for every site survey.
- **Coordination Gaps:** Relying on emails or calls to delegate technical tasks to field staff.
- **Brand Inconsistency:** Invoices and quotes varying in layout and detail, affecting professional perception.

The Solution: A Bot-Driven CRM Ecosystem

The CRM was built on a relational database structure that links **Clients, Projects, Staff, and Financials**, all governed by a layer of event-driven **Automation Bots**.

1. Smart Quoting & Document Bots

Instead of relying on JavaScript, the CRM uses **Document Bots** to handle professional outputs.

- **The Trigger:** Changing a project status to "Quote Approved."
- **The Action:** The bot instantly pulls data from the **Bill of Quantities (BoQ)**, merges it into a branded template, and generates a PDF.
- **The Result:** Consistent, professional invoices and quotes produced instantly, reducing the "time-to-send" by 90%.

2. Field Delegation & Task Bots

To manage the project lifecycle, **Task Bots** act as the bridge between the office and the site.

- **Automated Dispatch:** When a project is marked "Scheduled," a bot identifies the assigned field staff and pushes the project documentation directly to their mobile interface.
- **Real-Time Status Updates:** As field staff complete groundworks or installations, their mobile updates trigger a bot that notifies the admin team and updates the project dashboard.

3. Integrated Client & Project Tracking

The CRM provides a single source of truth for all stakeholders:

- **Centralized Dashboards:** A high-level view of project health, showing real-time margins, overheads, and completion percentages.
- **Technical Descriptions:** Using built-in logic, the system ensures that every project includes a detailed "Description of Works," covering everything from trenching to final commissioning.

Technical Architecture

Component	Technology	Functional Description	Industry-Specific Benefit
Data Core	Relational Tables	Centralized database linking Clients, Projects, Staff, and Bill of Quantities (BoQ).	Eliminates data silos; ensures every quote is backed by real-time material and labor costs.
Logic Layer	AppSheet Automation Bots	Event-driven triggers that monitor data changes (e.g., Status = "Signed").	Replaces "human middleware"; automates the hand-off from sales to field engineers without manual emails.
Document Engine	AppSheet Automation (Doc Template)	Dynamic PDF generation using Google Doc templates and Bot-triggered exports.	Ensures 100% brand consistency; produces professional, itemized quotes and invoices in seconds.
Communication	Native Push & In-App Alerts	Bot-led notifications sent directly to staff mobile devices when tasks are assigned.	Faster field response times; engineers receive site addresses and wiring specs instantly on-site.

Asset Storage	Google Drive / Cloud Storage	Automated folder creation and file sorting by Client and Project ID.	Organizes site photos, commissioning certificates, and signed PDFs into a searchable, permanent audit trail.
User Interface	Multi-Role GUI	Responsive views tailored for Admin (Desktop Dashboard) and Field Staff (Mobile Task List).	Provides office staff with high-level financial oversight while giving engineers a simplified mobile workflow.

The "Bot" Workflow Architecture

Rather than running a script, the architecture follows this **Event -> Condition -> Action** flow:

1. **The Event:** A user updates a project status in the CRM (e.g., "Install Ready").
2. **The Bot Condition:** The bot checks if the project has an assigned engineer and a valid BoQ.
3. **The Automated Action:** * **Action A:** Generate a branded "Work Order" PDF.
 - o **Action B:** Send a Push Notification to the assigned engineer's phone.
 - o **Action C:** Create a calendar event in the "Quote Generator - Calendar" to block out the installation dates.

This architecture ensures that the system is proactive—working in the background to keep the project moving while the team focuses on the electrical work.

Conclusion:: The Future of Electrical Project Management

The transition from a manual, spreadsheet-heavy process to an automated **CRM powered by AppSheet Bots** represents a fundamental shift in how electrical contracting operates. By automating the "busy work"—document generation, task delegation, and status tracking—the business has successfully reclaimed hundreds of administrative hours.

The success of this CRM proves that high-level technical coordination does not require a massive administrative team; it requires a smart architecture. With a system that proactively manages the project lifecycle, the company is now positioned to scale its project volume without compromising on the precision, branding, or technical excellence that its clients expect.