



“This technology promises significant time savings and cost reduction during plan review.”

KHOSROW FALLAH
P.E. / A.I.A.
CDA Associate Civil Engineer

Summary

Customer: Marin County, CA processes 1200 building plans a year and was looking for an efficient method that would reduce costs and paper.

Challenge: Multi-department review process of building plans was redundant and wasteful which increased costs and delayed projects.

Solution: Capturx Forms for Excel and Capturx for Autodesk Design Review allow for digital submission and tracking of building plans.

Results: Reengineered plan review process has improved workflow and is no longer wasteful and there were no training costs involved.

Marin County Reengineers Plan Review and Field Inspection Operations with Capturx

Smart Growth is a top priority for Marin County, one of the oldest counties in California. The Building and Safety Division oversees the building permitting process, which requires building plan reviews by Building and Safety, Environmental Health, Land Development, and the Fire Department to ensure plans are up to code. Each year, more than 1,200 building plans are submitted in triplicate for review. In 2009, the Building and Safety Division set out to reduce the massive amount of paperwork by re-engineering their permitting workflow. They selected Capturx software for digital pens to automate and speed up the process. As a result, they found a greener process that removes the need for triplicate paperwork while also significantly streamlining the permitting and inspection process.

Situation

Marin County's Deputy Director of Building and Safety, Bill Kelley, CBO, led the process re-engineering. In evaluating the existing permit and construction process, Bill noticed a range of redundant and wasteful procedures. Building permits are often reviewed multiple times by multiple departments before final sets of plans are approved. Each department has its own checklist of code violations. Notes and markups by individual departments are not always coordinated and reviewed across departments, leading to unnecessary delays and confusion for applicants. This prolongs the process and leads to wasteful reprinting of plans. Once approved, plans are distributed to the construction site, the building and safety office (for the department's record) and to the County Assessor (for tax purposes). Two identical sets of inspection cards are also used as checklists at the construction sites and the Building and Safety Office to help keep the inspection and building teams coordinated.

Challenges

The iterative nature of the plan review process - submission, review, revision, and resubmission of plans - results in a large amount of paper which is expensive for all stakeholders to manage. The 1,200 building plans submitted annually are typically 4 - 8 Architectural E-sized sheets for small projects or 20 - 30 sheets in length for larger projects. Physically sending, scanning, printing, and storing all the large format plans creates a hefty cost on the county, builders, and the environment.

The current inspection card process is also difficult to manage since the inspection cards on site and in county offices can easily become out of sync at any stage

“I haven’t seen this much potential since the computer mouse was invented, to allow staff to continue working the way they are used to, and still incorporate the benefits of enhanced technology.”

WILLIAM KELLEY
CBO
CDA Deputy Director
of Building and Safety

“Through the use of Capturx Marin is improving our e-government and customer service capabilities, furthering our sustainability goals by reducing paper, and creating workflow efficiencies.”

BRIAN C. CRAWFORD, A.I.C.P.
Director
Marin Community
Development Agency

of the process. As a result, teams can often assume that projects are on smooth paths to completion only to find issues later which delay projects and create extra work.

The paper management hassles don’t stop there. When construction is complete and approval is given, the office copies of each project’s final paper plan and the inspection card need to be scanned for public records.

Solution

To streamline the processing of marked-up plans and forms, the Building and Safety Division selected Capturx for Autodesk Design Review and Capturx Forms for Excel.

The county now works with digital copies of plans, marked up with digital pens using Capturx for Autodesk Design Review. Applicants can submit electronic copies of their plans or the county will scan and convert the paper plans into digital files. Plans are printed with Capturx, which generates a unique digital watermark that enables markups to be digitized and recorded as they are written with digital pens. The reviewer’s redlines and notes about building code issues appear as normal ink on the paper plans. When the digital pen connects to a PC, the reviewer’s notes are also automatically integrated into the original digital copies of the plans for immediate sharing and tracking.

The county is using Capturx Forms for Excel to keep the inspection cards at the county office and job sites in sync. When plans are approved, the Permit Counter Technicians will print an inspection card for the job site using Capturx. On site, the inspector adds notes to the card using the digital pen. Capturx leaves behind an ink-on-paper record of the notes while also instantly digitizing and recording the notes. When the reviewer connects the pen to their office PC, all of the information is automatically uploaded in Office, providing immediate access to identical data from the job site and improved project visibility.

Benefits

Digitally enabling the plan review process with Capturx allows all stakeholders to have an immediate digital copy of all marked-up plans – streamlining reviews across departments. The applicants receive a single electronic copy of all the markups and department code issues. There are fewer resubmissions and a lot fewer stacks of paper taking up office space, making for a greener process. With Capturx Forms for Excel, inspection cards are always in sync – minimizing miscommunication and delays.

Finally, the Assessor’s office gets access to the same digital documents for tax purposes, eliminating their need to create and store redundant paper copies. Although the process has been re-engineered, Capturx did not require significant changes to the plan review process and there was no additional training cost incurred. The reliable handwritten mark-ups on large format paper continue the way they always have. The pen is durable, easy to carry, and the data capture and upload can be performed by nearly anyone.