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# Illinois Board Improves Bid Solicitation with Development Solutions

By VickiHamende  
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By:  
[Vicki Hamende](#) [1]

The Capital Development Board [2] (CDB) is the construction-management arm of the Illinois state government. [3] With approximately 140 employees throughout the state, CDB oversees the design and construction of new elementary and high schools, college and university facilities, public safety centers, museums and historic sites, state recreation areas, health centers, office buildings, and prisons. In addition, CDB is responsible for annual repair and renovation programs at more than 8,400 state-owned properties, as well as the removal of environmental hazards and the upgrading of facilities to meet accessibility standards. In all, CDB and its workforce manage capital improvements and construction worth more than \$3 billion each year.

Soliciting bids is a time-consuming task for the board and one that requires the utmost accuracy. In the past, CDB used several separate applications and manual processes involving emailing, telephoning, and hand typing. Unfortunately, the system often led to the duplication of data, inconsistencies in data structure, manual calculation, and the rekeying of information. The construction-management team wanted a more consistent and efficient way to organize its data and processes.

## Creating a New System

The board designed a web-based system running on an IBM i back-end server with an IBM DB2 database to handle the soliciting process. The design focused on fixed procedures, confidentiality, the publishing of data on the web, and workflow that called for sequential performance.

"The system we developed was a challenge with its very specific workflow design," reports Richard Meyerholz, information systems analyst at CDB. "CDB had to ensure that all approval and review requirements in the phases of design and construction were met before project advertisements and awards were posted to the website for public viewing," he explains.

"From experience we know that it's important to use the right tools, and CA Plex [4] and Websyidian [5] (Websyidian Web Developer and WebsyidianExpress) work well for us. These tools

are model-based, and this means that you can build on pre-defined patterns to fit your specific needs. It cuts development time to a minimum, and, furthermore, Websyidian offers one of the strongest pre-developed web security systems on the market that integrates with CA Plex."

### **How It Works**

The solution consolidates old applications and incorporates the new functionality within CDB's line-of-business Plex application using Websyidian for the web application to display on the website.

The CDB project manager initiates a project advertisement through the agency's existing in-house application. After approval and review in various units, CDB publishes the project on the website in the Future Bid Openings section as a future project. The board secures funding approval and then establishes dates for opening the bids received. After CDB opens the bids at a public meeting, it enters the bid data into the main system and publishes it on the website. The award data appears on the site as well.

### **Saving Time and Money**

The time it takes to initiate, approve, and report project bid advertisements and awards has decreased, and all data is now located in one place for ease in reporting and managing. The internal reporting is also consistent and accurate, according to Meyerholz.

Altogether, he reports, these improvements have resulted in a solution that shortens the processing time for project bid advertisements, benefitting CDB and the public. The Illinois board has reduced the number of applications, eliminated duplicate data and work processes, and eliminated manual calculation and the re-keying of information.

CDB develops the client server applications with CA Plex on Windows and the web applications with Websyidian v5.6 and the Apache server as middleware. The solution has easily handled the workload, which can spike substantially on publication days for notifications and review results.

### **Preparing for Tomorrow's Challenges**

Illinois's CDB team members are confident that web-based applications can solve more of their process issues. The next feature CDB is ready to tackle is an online portal in which contractors, architects, and engineers can submit required project information directly into the CDB system via the website.

CDB will work with ADC Austin for the web development tooling required for the project. ADC Austin is a technical adviser and reseller, providing training and technical services for companies using CA Plex and Websyidian products.

"Security is a major issue in these kinds of features," says John Rhodes, principal architect at ADC Austin. "CDB has decided to use the Websyidian web-product, WebClient, to develop the application. With WebClient, users sign all web pages with an MD2 algorithm, so not one pixel can be changed or accessed without authorization. Furthermore, it has a high degree of usability both in the development phase and in production," Rhodes adds.

## The Tools

Formerly known as AllFusion Plex, CA Plex helps users develop applications in a Windows environment and then compile and test them in a target environment such as the IBM i. CA Plex supports the development of many different types of applications, including client/server, web-based, service-oriented, character-based, and batch and wireless device-based, all from a single set of skills and development techniques.

CA Plex is a multi-platform, model-based, architected rapid application development (ARAD) tool that includes architectural and design objects known as patterns. By eliminating the need to code repeatable elements of applications, patterns significantly accelerate the time required for projects, which in turn provides a cost savings.

Developed for CA Plex, RPG, and CA 2E users, Websyidian is a suite of tools and products for web development, web services, SOA, RIA, and XML.

ADC Austin supplies the i community with application modernization and vertical products, custom development, technical training, and document-management solutions.

"We are pleased with the on-demand project assistance we receive from ADC Austin," Meyerholz notes.

*Vicki Hamende* ([vicki.hamende@penton.com](mailto:vicki.hamende@penton.com) [6]) is the senior editor of *System iNEWS*

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[4] <http://www.CA.com>

[5] <http://www.websyidian.com>

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