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Design Review & Checking System (DrChecks)

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DESIGN REVIEW & CHECKING SYSTEM (DRCHECKS)

THE NEED

Given the high turnover of experienced personnel throughout the Architect/ Engineer/ Contractor (A/E/C) community, exchange of personal lessons learned and other important organizational experience occurs informally by word-of mouth among colleagues. More often, however, experienced people do not have time or tools to transfer their hard-earned knowledge to others. Turning an individual's unique project learning into corporate knowledge is essential and critical to providing a quality product. Past experience has shown that proprietary, stand-alone systems to capture and use lessons learned are too expensive to maintain over time. An integrated approach that uses commercially available software is needed. The intersection of the process whereby organizational knowledge can be captured and evaluated, and the process of design and Biddability, Constructabilty, and Operability (BCO) reviews provides one of the best points at which to develop an integrated method.

THE TECHNOLOGY

The U.S. Army Construction Engineering Research Laboratories (CERL) has developed a prototype computer system that supports the capture and use of organizational experience in the context of the design review process. The world wide web provides the communications backbone of the Design Review and Checking System (DrChecks). Users access DrChecks using commercially developed, free web browser software. The hardware and software to operate a local DrChecks server are also very inexpensive, commercial products. The use of such simple and inexpensive commercial software also means that personnel with limited software engineering knowledge can make local modifications to the system as needed.

DrChecks, is easily updated to support review of other project related documents and also seamlessly integrates with the Corporate Lessons Learned (CLL) system, which provides an integrated way to capture repetitive deficiencies identified during the review process. Alternatively, users may access and enter potential findings directly into the CLL from outside the DrChecks system.
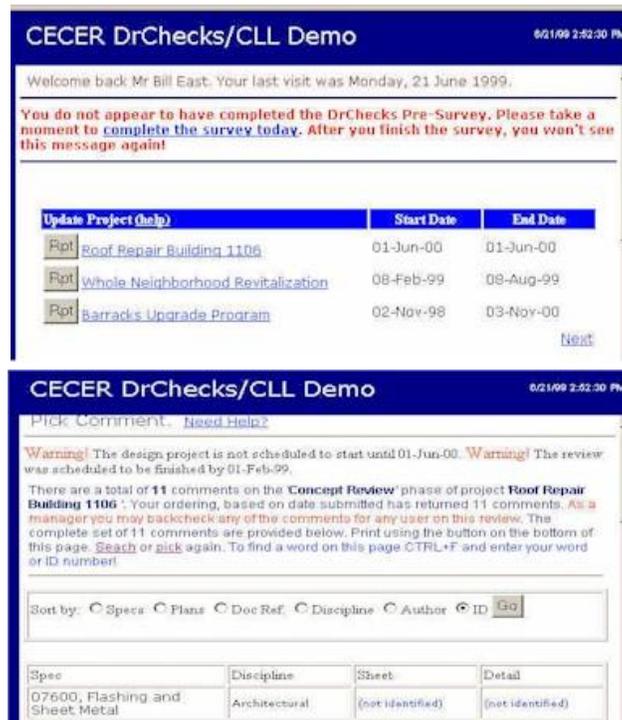
Internet Based - Web-based Engineering Software

FIGURE 1 DESIGN REVIEW & CHECKING SYSTEM (DRCHECKS)

THE BENEFITS

Current unrealized costs from a simple design review may reach 5% of the overall construction budget. The application of on-line organizational experience should double those customer savings. Customer satisfaction should also increase as the criteria used by various customers are documented in success stories and lessons learned. An even more important aspect of DrChecks is that the system can bring project stakeholders together to produce the best possible design given the variety of constraints that make each project unique. Finally, the overall cost of the design review features of DrChecks could be significantly less than the cost of current technology.

- Provides the platform for the review and feedback of project related documents.
- Provides a user-aware interface so that each user sees only those functions and information appropriate for the job at hand.
- Provide a cost-effective, useful way to capture, manage, and use corporate knowledge in the context of a fully functional design and BCO review tool.
- Can access using free internet browser software, therefore, little or no training is required.
- Significantly less long term operations and maintenance costs than traditional software.
- Empowers project teams to improve design quality through an integrated web-based business process.

STATUS

DrChecks is the latest in a series of CERL products to enhance design quality. The detailed requirements for DrChecks were developed by the Design Review Tools Steering Committee in 1996 and 1997. DrChecks was tested by users from within and outside the Corps in FY97. Based on those tests the system is now completing its final set of revisions. DrChecks/CLL are currently being used by nine Corps of Engineer District Offices, the U.S. Department of State's Foreign Building Office, and the U.S. Bureau of Reclamation. A variety of state and local governmental bodies and offices are also considering the use of DrChecks at their offices. And also several commercial design firms use DrChecks.

BARRIERS

The only barrier to using DrChecks directly is that users must have access to the internet. To assist users who may be unable or unwilling to use the internet, a MS Word file has been created to capture review comments. The output of this template can be imported directly into DrChecks.

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2. Builder's Net, Design Review and Checking system

REVIEWERS

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DISCLAIMER

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