

BUILDER™ Sustainment Management System

Cardno has conducted more than 500 Million SF of inspection as well as conducted many training sessions for our clients



The BUILDER™ Sustainment Management System (SMS) is a Web-based software application developed by Engineer Research and Development Center's Construction Engineering Research Laboratory (CERL) to help civil engineers, technicians and managers decide when, where, and how best to allocate resources within a constrained budget. Because building assets are so vast and diverse, a "knowledge-based" philosophy drives the BUILDER™ SMS process. The process starts with the automated download of real property data, and then more detailed system inventory is modeled and/or collected which identifies components and their key life cycle attributes such as the age and material.

The component inventory is then assessed based on observation or

age to derive a Condition Index (CI), a life cycle measure on a scale of 1-100, 100 being new. A rigorous inspection methodology ensures objective, repeatable, and auditable inspection observations. The level of detail and frequency of these inspections are not forced like other processes; they are dependent on knowledge of component criticality, the expected and measured condition and rate of deterioration, and remaining maintenance and service life. This "knowledge-based" inspection focuses attention to the most critical components at the time. In addition to these condition assessments, functionality assessments can be performed to evaluate user requirement changes, compliance and obsolescence issues. This provides a comprehensive picture of the overall performance of building assets and their key components.

Problem

The US Army owns over 165,000 buildings comprising 1.1 billion square feet. It spends about 55 percent of its installation real property maintenance funds on maintenance and repair (M&R) of these buildings. But, because of tighter resources on funding and personnel, inspection and preventative maintenance programs for critical building systems and components have been abandoned at many installations. This has forced building managers into a largely reactive maintenance mode, responding to unexpected component breakdowns and system failures at the most inopportune and expensive time. In addition, many buildings currently serve some function to the mission that is much different than the originally intended purpose when designed. The total result is that work cannot be planned, programmed and



budgeted effectively. BUILDER™ SMS addresses these issues by providing managers responsible for the building assets with a support tool for sustainment, restoration and modernization (SRM) decisions.

Benefits

BUILDER™ SMS is an important tool in ensuring mission readiness and sustaining building infrastructure investment. With information about condition, functionality and remaining service life, short- and long-range work plans can be developed based on sound investment strategies, prioritization criteria and budget constraints. Penalty costs are reduced allowing more work to be accomplished with the resulting improvement in mission readiness.

Simulations can be run to show the future impact of current M&R decisions. The result is a flexible list of work items expected to be accomplished based on actual funding levels. In all, the BUILDER™ SMS process provides a more proactive means of asset management and resource allocation. In addition, the knowledge-based principles have been proven to significantly lower the cost of re-inspections while providing more meaningful SRM decision support metrics.

Status

BUILDER™ SMS has been selected as the enterprise condition assessment program for the entire DoD. Cardno conducted the majority of the assessments for the US Marine Corps (USMC). Implementation for US bases was completed in 2010, and we continue working for USMC refreshing data on an as needed basis.

The US Navy has also implemented BUILDER™ SMS as its enterprise life cycle analysis and long range work planning tool. Cardno was selected as one of the assessment experts during program roll out. The US Army and US Air Force both engaged Cardno to complete pilot trials for BUILDER™ SMS. Full implementation across these enterprises is on-going with our support.

Cardno is now excited to announce that BUILDER™ SMS and our expertise are now available to support organizations outside the federal sector to more effectively and economically manage the maintenance and repair of your building portfolio.

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Cardno is a professional infrastructure and environmental services company, with expertise in the development and improvement of physical and social infrastructure for communities around the world. Cardno's team includes leading professionals who plan, design, manage and deliver sustainable projects and community programs. Cardno is an international company listed on the Australian Securities Exchange [ASX:CDD].

Images:

Front Cardno assessor entering information into the BUILDER software.
Back from left to right: Assessors use the latest technology to ensure accurate and timely results

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