The BUILDER™ Sustainment Management System (SMS) is a web-based software application developed by ERDC’s Construction Engineering Research Laboratory (CERL) to help civil engineers, technicians, and managers decide when, where, and how to best maintain building infrastructure. BUILDER™ technologies and methods include a comprehensive inventory of building major components, including:

- photo imaging
- checklist-style, pen-based inspections
- condition indexes
- functionality ratings
- condition prediction capabilities
- revised remaining service lives based on condition
- seismic and other building compliance ratings
- budget planning procedures
- prioritized long-range work-planning procedures
- presentation graphics, and linkages to Autodesk, Inc.’s AutoCad®, Bentley Systems, Inc.’s Microstation, and other building drawings
- linkage to MAXIMO (asset management and maintenance software) and other Computerized Maintenance Management Software (CMMS)
- a built-in Geographical Information System (GIS) viewing capability.

The BUILDER™ decision support tool allows users to manage buildings individually or in groups, enabling effective management of historic, housing, health/environment, and safety/code issues. Projects can be BUILDER™-generated or initiated externally from customer requests.

The Army owns over 165,000 buildings, comprising 1.1 billion square feet, and spends about 55 percent of its installation real property maintenance funds on maintenance and repair (M&R) of these buildings. However, tight resources on funding and personnel have forced many installations to abandon inspection and preventative maintenance programs for critical building systems. Building managers fall into a largely reactionary mode, responding to unexpected component breakdowns and system failures at inopportune, expensive times. In addition, many buildings currently serve mission functions that are much different from the buildings’ original design purpose. Consequently, building maintenance is not planned, programmed, or budgeted efficiently.

BUILDER™ software (and technical assistance) is available to non-DoD customers through the sources listed at the end of this document. DoD customers may contact the POCs directly. First-time implementation of BUILDER™ entails some additional costs associated with the creation of the BUILDER™ database, which involves the collection of building inventory and inspection data, the gathering of unit cost information and the creation of M&R policies. These initial costs will vary from user to user. Users may also desire optional training and GIS coverage development, which may be scheduled through the listed distribution source.
**Benefits/Savings**

BUILDER™ provides managers responsible for the building assets with a support tool for sustainability, restoration, and modernization (SRM) decisions. The system gives functional managers and decisionmakers instant access to data about their building inventory, the current condition of individual buildings, a fact-based prediction of future condition, and current and potential regulatory compliance issues. BUILDER™ integrates information about condition, functionality, and remaining service life to develop short and long-range (multi-year) M&R work plans based on sound investment strategies, prioritization criteria, and budget constraints. The SMS consolidates a variety of building-related management issues into a single, proactive decision-support package that helps manage assets and allocate resources, lowers the cost of re-inspections, and provides meaningful SRM decision-support metrics.

**Status**

BUILDER™ 3.0 effectively manages vast and diverse building assets through a “knowledge-based” process that automatically downloads real property data, and then models a detailed system inventory to identify components and their key life-cycle attributes such as the age and material. The system uses this inventory to predict Condition Index (CI) measures for each component based on its expected stage in the life-cycle. Objective, repeatable inspections are then performed on various components to verify their condition with respect to the expected life-cycle deterioration. These “knowledge-based” inspections focus attention on the most critical components at the most appropriate time (to take action). The system tailors inspection schedules to unique asset management requirements, drastically reduces inspection costs, and ensures that assets perform to meet mission needs.

BUILDER™ can also be used to do functionality assessments to evaluate compliance and obsolescence issues, and changes in user requirements. These functionality assessments are similar to condition assessments in that they are used to identify modernization requirements. Together with condition assessments, they provide a total picture of needed facility investment requirements. These two new (patented) BUILDER™ capabilities provide a comprehensive picture of the overall performance of building assets and their key components.

BUILDER™ has been selected as the enterprise condition assessment program for the US Marine Corps. Implementation for US bases is expected to be completed in 2010. The US Navy has also selected BUILDER™ as its enterprise lifecycle analysis and long range work planning tool. Leveraging existing Navy data, integration with Navy information systems is expected to be developed and tested in 2010. The US Army has successfully completed several trials for various building components [using BUILDER™]. BUILDER™ is the only approved system to manage roofing components (using the ROOFER module). A new version (3.1) incorporates the ROOFER functionality and is currently being field tested, with expected completion summer 2010. The US Air Force completed a trial in fall 2009. A successful outcome has led to further work for other Air Force components as it studies its next generation IT Platform.

BUILDER™ has successfully completed the Defense Information Assurance Certification and Accreditation Process (DIACAP). This DISA certification is a major milestone toward deploying BUILDER™ across all DoD services in their IT environments.

**ERDC POC(s)**

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**Distribution Sources**

BUILDER™ may be purchased from:

- **Calibre Systems, Inc**
  - Ernie Houston
  - ernie.houston@calibresys.com
  - 757-548-6972

- **North Pacific Support Services**
  - Cameron Murray
  - cameron.murray@norpacss.com
  - 907-223-2989

**Available Documentation**

Program documentation and reference manuals can be purchased from the listed distribution sources, and are included with the product.