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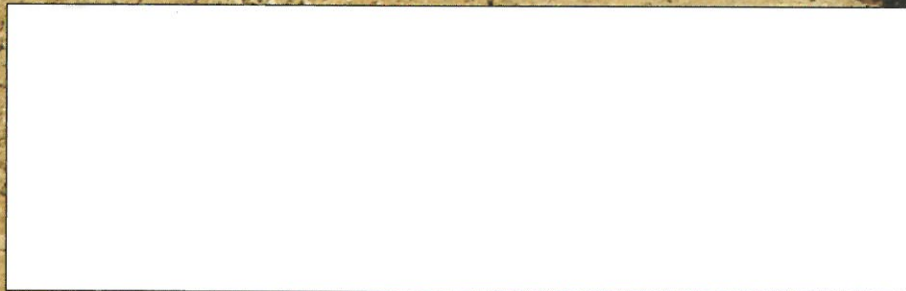
Identifying Automation and Technology Solutions
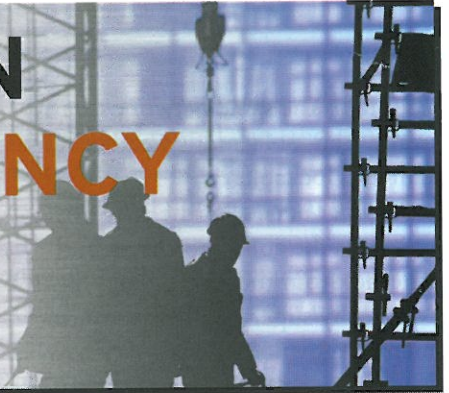
DIGGING UP THE DATA

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SIMPLIFYING DESIGN
THROUGH CONSISTENCY

THE UNITED STATES NATIONAL CAD STANDARD CREATES A CENTRAL FORMAT FOR DESIGN DATA.

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In 1983, Microsoft released the first version of the Microsoft Word application; a program designed to simplify and enhance word processing on computers. Word revolutionized document creation; today, it is so common that almost anyone can use it to create and edit documents.

One of the ways Word makes this process so simple is by placing the program's tools in the same place for every new document. Because these items are always located in the same place, users should be able to easily find "spell check" or "print," no matter who opens the program, no matter the computer.

Imagine if every time a new Word document opened, the user interface completely changed, forcing the user to relearn the program each time. That's what it would be like for A/E (architecture and engineering) firms that do not maintain a consistent design standard, such as the United States National CAD Standard (NCS). Without this consistency, these organizations are forced to use a different "standard" for every new project or new client, making it difficult for those involved to understand and use the project data. Without the consistency of a central standard, firms could end up with 100 different "standards" for 100 different projects.

"Standard" Advantages

The NCS provides a simple solution to this problem as it helps create an almost instant understanding of project data. When applied properly, it provides a consistent format and structured appearance, making it possible to easily and quickly comprehend, interpret, and use design data. With NCS in place, any user in the design process, from the architect to the engineer to the facility manager, can instantly understand everything included in the plan set. This eliminates confusion and redundancy, increases productivity, and reduces misinterpretation and costly mistakes.

It was for this exact reason that in 1999, Congress appointed the NIBS (National Institute of Building Sciences), www.nibs.org, Washington, D.C., to organize and maintain the NCS—to create a method to help designers and engineers classify electronic design data and produce quality projects. Today, many design and construction professionals recognize the standard as a tool that helps make the design process run

more smoothly; more than 5,000 public and private-sector workplaces across the country and around the world use NCS.

With the adoption of BIM (building information modeling), NCS will become even more critical to the construction industry. One of the greatest advantages of NCS is its seamless integration with the software associated with BIM.

Designers, engineers, and contractors require a consistent method to obtain the electronic information from BIM to send to employees at the jobsite. NCS allows the building team to communicate visual information in an efficient manner. In fact, printed output from BIM must comply with NCS formats to meet the minimum requirements of the National BIM Standard.

NCS Version 5.0

Recently, NCS released an updated version of the standard—Version 5.0. Just like previous versions, it combines documents from the AIA (American Institute of Architects), www.aia.org, Washington, D.C., the CSI (Construction Specifications Institute), www.csinet.org, Alexandria, Va., and NIBS. NCS includes:

- The NCS Foreword, Administration Guidelines, and Appendixes
- AIA CAD Layer Guidelines
- CSI's UDS (Uniform Drawing System) and DWG files of UDS Symbols
- NIBS Plotting Guidelines
- Microsoft Excel spreadsheets containing AIA CAD Layer Guideline files; UDS terms and abbreviations, schedules, and regulatory information; and plotting guidelines tables

While these features of NCS remain consistent, NCS does adapt to the needs of the industry, using feedback from end users and industry leaders. A central committee of professionals vets and approves this input by consensus to develop updated versions. The Version 5.0 release includes several of these refinements and additions.
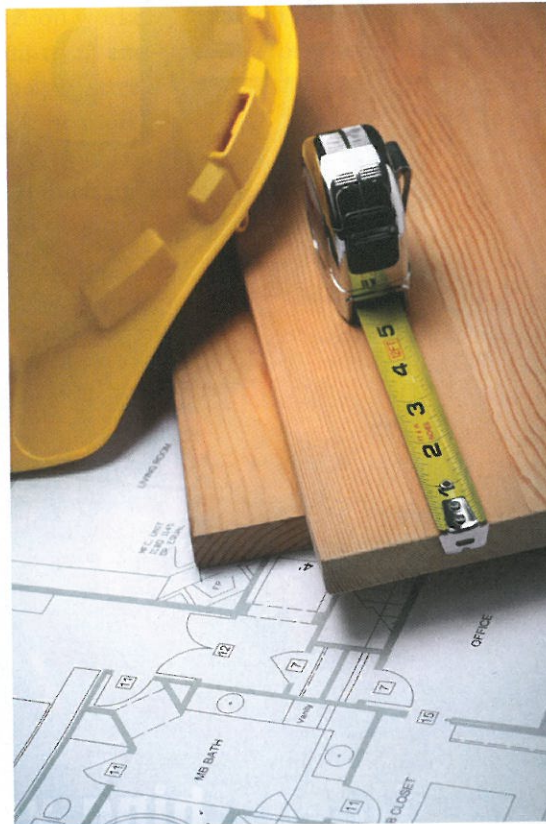
Without consistency in design, organizations are forced to use a different standard for every new project, which makes it difficult to understand and to use the data.

Most significantly, NCS has changed to an electronic format. Users may now access a simple bookmarked, searchable document on the Internet, rather than leafing through a two-volume set. This makes it easier to share the information within an organization. Another important revision is the inclusion of implementation guidelines. These guidelines outline a strategy of how to implement the NCS in manageable portions. This improvement provides a starting point for organizations as well as documentation of the feasibility of NCS.

Several other notable revisions to NCS Version 5.0 include Discipline Designators in the "Distributed Energy," "Real Estate," and "Survey/Mapping" categories; and new layers for structures, wind and solar power, fire ratings, air barriers, architectural curtain walls, and electrical cathode protection. Symbols for interior elevation indicators, azimuth indicators, architectural scale, electrical symbols, and other areas have been changed or added.

With all of these additions, NCS continues to provide an edge for those firms that implement the standard. Using one nationally recognized standard makes it much easier to uphold consistency within an organization. It saves time and money, as there is no need to switch gears between each plan set to determine plan details. It makes collaboration easier, as there is a common understanding among all the players on a construction project. NCS even makes plan sets easier to understand for contractors and facility managers who use the drawings after the design phase is complete. •