Using Technology to Help Clients Stay "ON TOP" OF ROOFING CONDITIONS

By Steven James, CDT

A common problem facing consultants is making sure that their clients perform inspections and maintain their roofs on a regular and timely basis. Many facility managers and building owners fail to do this because roofs are not visible on a daily basis; therefore, they are "out of sight, out of mind." In addition, the clients might be facing more immediate problems that keep pushing the roofs down on the priority list. Or it could be that the facility managers are new and not familiar with the maintenance schedules required for compliance with warranties.

Whatever the reason, consultants often have to help building owners understand that ignoring these critical elements of maintenance can be costly in the long run, result in higher energy costs, and lead to roofing and building damage that can bring critical building operations to a halt. Not only will scheduled inspections and maintenance prevent leaky roofs, but they also can prolong the life of the roof. Fortunately, technology is available to help consultants and their clients manage the following maintenance activities.

Maintain an Inventory

One important step in managing roofing assets while also reducing energy costs is simply taking inventory of the details and specifics of existing roofs, such as the insulation used or the color of the membrane. Many software programs allow this type of information to be collected and managed in a roofing-asset-management database, where it can be easily accessed, sorted, and shared with other involved parties. These programs can also be used for analysis and provide cost-savings benefits for consultants and property owners.

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Manage Information More Effectively

Unlike general spreadsheets, roof management software programs enable users to document the various roofing types with a common filing format such as the Construction Specifications Institute's (CSI) master format. Using standard data entry formats allows the sorting of large roofing inventories during analysis. The software can also format information in different ways, depending on the needs of the consultant.

Some management programs will support making assessments of the initial anticipated roofing life and adjusted expectations following inspections, using a Roofing Condition Index (RCI) zero-to-100-point score. For instance, some asset management programs have a color-coded system to index roofing conditions. Those with high scores are coded green for good condition, roofs in the middle range are coded yellow, and those with low numbers are coded red. This allows users to look at several roofs at one time and quickly decide which ones need immediate attention.

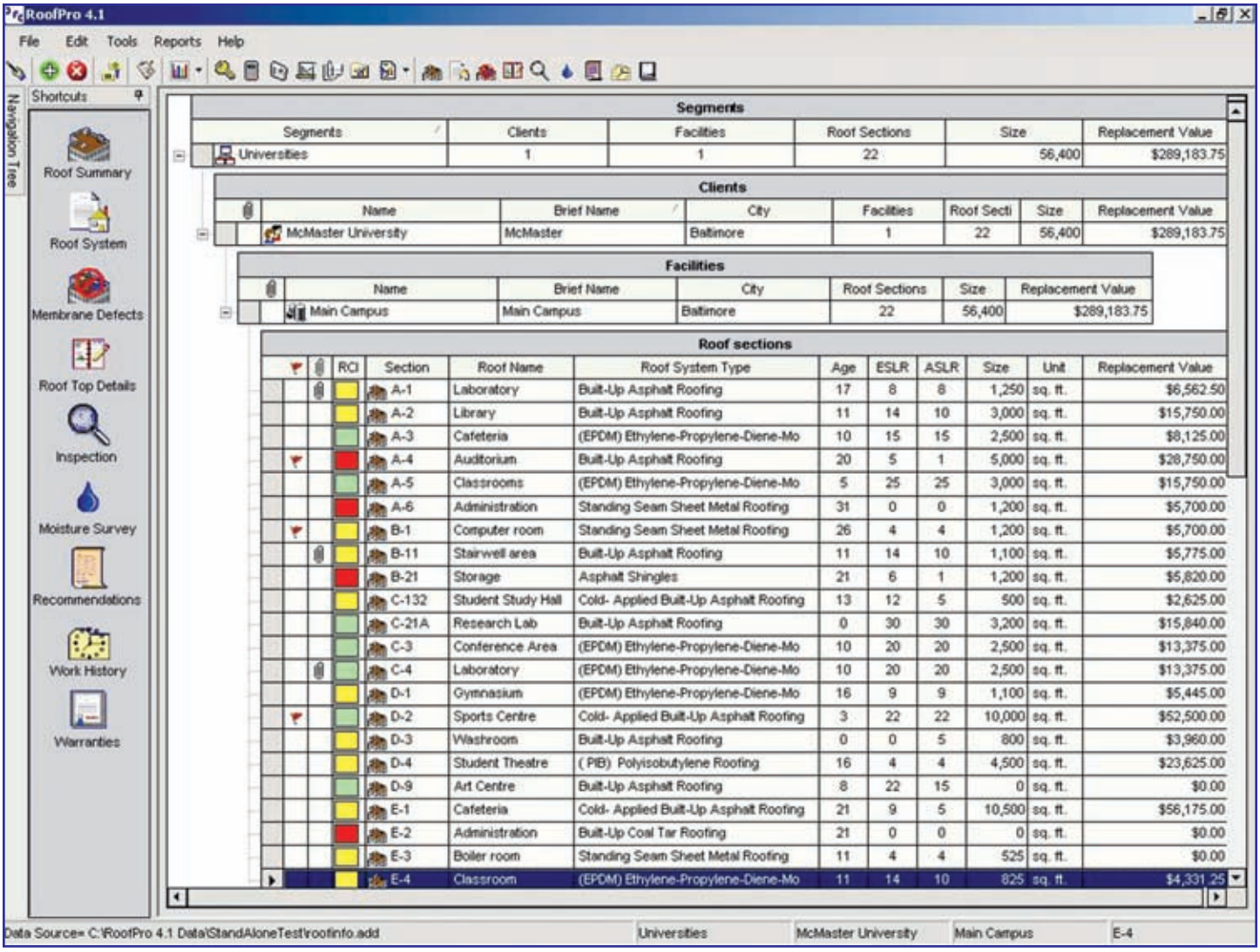
A more detailed inventory of roofing components can record the construction of the system from the deck up, listing system components and attachment elements to the structural deck and other system layers. The use of software tools to aid written descriptions of existing construction using Smart Text™ and Smart Lists™ saves time and can make inspectors more consistent in their explanations. Adding digital photos of core cuts and thermal scans of moisture surveys supports the inspector's evaluation of the roof system and estimated remaining life. This information can also be massaged for activities such as generating comparison budgets on the cost of roof repair versus replacement.

If a building has a green roof featuring vegetation over the membrane, detailed information of what lies underneath the vegetation will be important in locating and repairing a leak. Using the same tools to document deficiencies and their severity allows planning and prioritizing of maintenance activities.

In terms of energy management, management software can speed assessments and recommendations by listing details, such as how black roofs in a sunny climate might benefit from a reflective white coating to reduce cooling costs. Documenting the insulation of each roof system and the time at which it was installed can also help consultants and building owners make energy-conscious decisions.

Collect Critical Information During Inspections

Most consultants agree on the importance of conducting roof inspections at least once or twice a year, especially before a harsh season or after a severe storm. These



inspections are valuable not only in identifying existing problem spots – such as incidents of ponded water after a heavy rain or places damaged by hail or a large snowfall – but also in revealing areas that might require more frequent attention, such as flashings and caulking details. In addition, many roofing manufacturers require follow-up inspections on new installations in order to remain in compliance with warranties.

A roof management program can collect and supply information that is helpful to the inspector, such as what the manufacturer's warranty says about making repairs and who is allowed to make those repairs under the terms of the warranty. The roofing database can also store list of any activities the warranty recommends should be accomplished during inspections and maintenance, and how regularly these activities should be completed.

Without the proper tools, collecting and storing information when conducting inspections and performing maintenance can be time consuming. One technological instrument that is very helpful is the tablet PC. Combining a tablet with an inspection program allows inspectors to collect detailed data on the roof without having to take extensive notes by hand. Instead, the inspector can make electronic notes on roof plans and collect and manage field photos while on the job, and then download the information when he or she returns to the office. Some field inspection software programs even have inspection templates to make sure that no critical steps are overlooked during the inspection.

Maintaining and Sharing Roofing Information

The use of technology can help consultants and their clients maintain and share information efficiently and accurately from the day a building is first commissioned. Instead of transferring a vast amount of paper documents such as building plans, warranties, and maintenance guidelines when a building is commissioned, a roof management program allows the paper files to be converted into electronic files, which can then be organized by clients, facilities, and roof sections.

A roofing asset management software program can maintain this information in a database in a consistent electronic format, which allows the consultant to present condition data to the facility manager and building owner in a way that also allows them to cross-reference this information.

For instance, using a standard roof management format, contractors, consultants, and facility managers can share data files containing detailed information to document installation details, problem areas, and scheduled work in order to save time organizing paper files or unstructured electronic data. Some management programs will also track work requests through the process of planning, budgeting, and completion stages and then update the work history.

In addition, using a program in which the attached files are linked to facilities helps professionals maintain client data over multiple years as inspections are con-

ducted. These files, photos, and CAD drawings can be used to show "before" and "after" images of any problems and repairs.

Reporting Information

Many software programs also offer report-generating features that allow a user to select from hundreds of reporting formats to produce high-quality documents, including digital photographs, marked-up CAD drawings, completed inspection reports, and budget estimates. This information can then be shared with associates via a hard copy, an e-mail, or a secured Web site.

An Improved Bottom Line

An example of someone who benefits from using a roof management program is Ken Fifelski, building envelope specialist at Kalamazoo-based Western Michigan University. He uses his roof management software to help him manage 491 roof sections that are spread over 105 major buildings. "Access to accurate, up-to-date data allows the university to do a better job maintaining its roofs," states Fifelski.

"Now we can use this data to focus on roofs that are in poor condition, have warranty issues, or are in a crucial, sensitive area," he explains. "By making more informed decisions, we are able to react faster to potential problems and extend the lives of the roofs."

Steven James

Steven James founded Digital Facilities Corporation (DFC) in 2002 and has been promoting the use of proactive roof management technologies ever since. DFC's flagship product is RoofPro®, a technology currently being used to manage over one billion square feet of commercial roofing in both the U.S. and Canada. DFC also provides IT development services for building owners, property managers, consultants, roofing service contractors, and manufacturers. Prior to founding DFC, James was with Stevens Roofing Systems, a commercial manufacturer based in Holyoke, Massachusetts, where he was vice president of sales and marketing and oversaw much of the company's North American business operations. Before the position at Stevens, James worked at W.R. Grace Construction Products for 17 years, where he held a variety of management positions in roofing, structural waterproofing, and fire protection systems. James has an M.B.A. from George Fox University and a B.S. in business from Portland State University. He has been a member of the Construction Specifications Institute for 20 years and holds a CDT certificate.