



## tech talk

BY OLIVER WITTE

# Tech takeover in Pennsylvania?

## New codes make computer-aided design more viable

**B**uilders in rural Pennsylvania are finding ways to cope with the new Uniform Construction Code adopted earlier this year, and the solutions might be instructive to builders facing similar situations in other states.

The Pennsylvania UCC is based on the International Building Codes, developed by the International Code Council, headquartered in suburban Chicago. The council was founded by the three major model code groups to agree on a single set of minimum standards. A push is under way to get all states under the IBC. More than 75 jurisdictions adopted the new International Codes, called I-Codes, during the first five months of this year, according to the council's Web site. For a map showing the status of I-Code adoptions around the country, see [www.icc-safe.org/government/adoption.html](http://www.icc-safe.org/government/adoption.html).

Pennsylvania's transition to I-Codes is a challenge for some builders who operate in jurisdictions that previously had either no building code or a nominal code because:

- Procedures that previously were handled informally now take more time and detail.
- Some building types that previously were exempt in some localities, such as houses, now must conform.
- Definitions are in transition.
- The familiar problem of inconsistent interpretation remains.

At the two extremes, nothing has changed: Commercial buildings continue to be covered, and they continue to require a building permit; agricultural buildings were exempt before and remain exempt now.

But what is an ag building? If it is

combined with another use, it might be covered, says Tim Royer, a professional engineer with Timber Tech Engineering in Denver, Pa.

Royer gave these examples:

1. If a horse barn is connected with a viewing area or is combined with living quarters for someone caring for the horses, the whole building is covered by the code.

2. Some Amish members might want to run a cottage industry, such as a small welding shop, attached to a barn. Even if the shop is occupied exclusively by family members, the building now needs a fire-wall separating the two uses.

Detached outbuildings larger than 500 square feet are now covered. Smaller outbuildings remain exempt.

The easy way out might be to hire an engineer to prepare the plans and stamp them. But some of Royer's clients prefer to prepare their own construction drawings for conceptual planning and use as a sales tool, submit them to him for redlining, and make the required corrections so he can fulfill his professional responsibility to supervise the plans.

If drawings are required, the dominant computer-aided design program is Autocad. Various versions range in price from \$129 for Autosketch to \$4,700 for Autodesk Architectural Desktop. Learning the full version is a chore for the occasional user, but community colleges such as Triton College in River Grove, Ill., are turning out competent Autocad drafters.

Easier alternatives include Datacad, priced at \$995 for the full version or \$195 for the light version. A demonstration version can be downloaded free from the Datacad Web site ([www.data](http://www.data)

[cad.com/demo](http://cad.com/demo)). Version 11, which is current, reads and writes files in Autocad formats DWG and DXF through Release 2000. An upgrade that will read and write Autocad 2005 files is in the works, according to Mark Madura, president of Datacad.

Weaver Remodeling in Goodville, Pa., likes a CAD program called SoftPlan because it is tailored for residential design. Mike Steffey, a Weaver estimator, says the program is so easy to use that sales representatives can sit with a prospective client and produce quick 3D views to show the customer how the building will look. The information entered by the sales staff can be turned directly into construction drawings. SoftPlan is priced at \$2,985 for the full version or \$985 for SoftPlan Lite. SoftPlan can import and export Autocad DWG files. The publisher, SoftPlan Systems, says the program can incorporate code requirements.

"We still have one salesman using Autocad," Steffey says, "but we plan to complete the switch to SoftPlan within the next six months. Everything has to be done on paper these days, so we're doing more homework on our end."

Royer also praised Archicad for its excellent 3D drawing power.

Construction Maestro, another design program, won't engineer a building, but the drawings it produces are detailed enough to satisfy a building inspector. Changes are easy and a new set of corrected drawings can be printed quickly.

Robert Andrejack, a builder in Danielsville, Pa., is getting plenty of use from his Construction Maestro program because he says most townships now want to see detailed drawings.

Weaver also is looking at an energy calculation program called ResCheck. Steffey said some municipalities are starting to require it, too.

ResCheck, formerly called MECcheck, was developed to simplify and clarify compliance with the Model Energy Code. It is free from [www.energycodes.gov/rescheck](http://www.energycodes.gov/rescheck). Version 3.6 Release 1 is current. It runs on both Windows and Macintosh operating systems.

Help with structural design is available from WoodWorks, which is based on the national design specification by the American Forest & Paper Association. The program is priced at \$795, although discounts are available.

WoodWorks is a one-stop solution for designing wood buildings electronically using the latest wood building codes, according to Robert Taylor, director of technology transfer for the American Wood Council in Washington, D.C. The program will design various types of buildings for gravity and lateral loads (e.g., wind and seismic).

The WoodWorks suite incorporates three programs: Sizer, Sheerwalls, and Connections.

Sam Francis, northeastern regional manager for building codes for the American Wood Council, cautioned that WoodWorks is not intended for structural novices. He described it as a sizing and location tool. More work would be required to turn it into a construction drawing.

Builders who want all 14 I-Codes (including plumbing, energy, residential, and fire), on their computer in searchable form can buy a CD for \$405 from the International Code Council. It accepts links, exceptions, and notes. Various discounts can reduce the price to as little as \$125. See [www.iccsafe.org](http://www.iccsafe.org).

Last spring, the code council introduced a version of the I-Codes that runs on the Pocket PC operating system. The price is \$259. By the time this issue of *Rural Builder* is published, the council expects to have opened a Web site where the codes can be viewed free online, according to Steve Dagggers, spokesman for the council.

Members of the National Frame Builders Association have access to a

Web site that provides links to all the major codes. ♦

For more information on Autocad, circle reader service number 75; for Datacad circle 76; for SoftPlan circle 77; for Construction Maestro circle 78; for ResCheck circle 79; for WoodWorks circle 80.

Oliver Witte teaches journalism at Southern Illinois University. He was the founding editor of AIA's Architecture Technology magazine and for several years managed the computer-aided architectural evaluation program for Architecture magazine. Contact him at [owitte@sui.edu](mailto:owitte@sui.edu).

**THOMAS WOOD PRESERVING COMPANY, INC. CAN DELIVER**

Many lumber dealers now stock a variety of treated wood products and Thomas Wood can deliver. We offer mixed loads of NatureWood® brand preserved wood and CCA pressure treated wood. We also offer KDAT in all product lines. Our specialty is providing products for the post frame construction and agricultural uses. Call Thomas Wood today for quotes on CCA, NatureWood and KDAT treated wood products.

**ELLIOTT, MS**

**NatureWood**  
PRESERVED WOOD PRODUCTS

**TWP**  
Thomas Wood Preserving Inc.

**662-226-2350**  
**P.O. Box 547**  
**8 Mi. S. Of Granada, off Hwy 51**  
**Elliott, MS 38926**

NatureWood products are treated with an alkaline copper quaternary preservative. CCA is Chromated Copper Arsenate. NatureWood is a registered trademark of S-T-N Holdings, Inc. NatureWood brand products are produced by independently owned and operated wood preserving facilities. © 9/2004

Circle Reader Service #1466