



# Metro Codes

E—News For Professionals

Metropolitan Government of Nashville and Davidson County

## INSIDE THIS ISSUE:

<i>SMART codes™</i>	1
<i>Message From the Director of Codes</i>	2
<i>Building &amp; Safety Employees Recognized</i>	2
<i>Codes % Building Safety Employees Recognized</i>	3
<i>Electrical License Renewal Reminder</i>	3
<i>Technically Speaking</i>	4
<i>TBOA - Notice To Design Professionals</i>	5
<i>Mayor Names Assistant Director to ECD Office</i>	5
<i>Tree Topping Hurts Trees</i>	6
<i>Employee Highlights</i>	7

Don't miss a Special Training opportunity for Design Professionals and Code Officials offered by the Tennessee Building Officials Association

See page 5 for details.

## SMART codes™ Promoted at Conference

Metro Codes and Building Safety Director, Terry Cobb, recently spoke to convention attendees of the North American Steel Construction Conference at the Nashville Convention Center.

Terry Cobb and the International Code Council's, Senior Advisor for Government Relations, David Conover, jointly delivered a presentation to the Construction Industry Roundtable on the topic of "Automated Code Compliance Checking". Their purpose was simple, "to provide a view to the future of how building information models (BIMs) will be used as a basis for automating the process of building permit plan review."

Terry Cobb said; "All who are involved in the building and construction industry are moving swiftly into the future utilizing automation to efficiently improve processes. This includes building officials."

Cobb and Conover presented a view of the progress made by the International Code Council to develop all the codes published by the Code Council into digital data format which is easily integrated and interoperative with building information models (BIMs). The Code Council's project is known as SMARTcodes™.

A building information model (BIM) is simply a digital representation of the physical and functional characteristics of a building.

While, building information models (BIMs) represent the wave of the future for building design and construction, the steel industry is already a step ahead as steelwork goes from design, to costing, to layout to actual cutting and fabrication all via software using the data in a BIM of the structural design. This will eventually relate to and connect to SMARTcodes™ since all these applications will feed off of or into the BIM – and all construction projects must pass through a building permit application process and a review for code compliance.

Already, the SMARTcodes™ initiative has successfully converted the requirements of the International Energy Conservation Code (IECC) and is currently converting the 'means of egress' and 'accessibility' requirements from the International Building Code, International Fire Code and the ICC/ANSI A117.1 Accessibility Standard. According to Conover; "it's only a matter of time before the Code Council converts all of the International Codes to the digital data format – SMARTcodes™."

"By integrating 'automated code checking' with building design software as well as permit application and plan review, time and money can be saved in the construction process. This will mean a real savings of hours, days and weeks in a typical construction project time schedule. Plans can be reviewed quicker, involve fewer revisions and construction can be started and completed sooner," Cobb said.

*"All who are involved in the building and construction industry are moving swiftly into the future utilizing automation to efficiently improve processes. This includes building officials." - Terry Cobb*

Continued from page 1

According to a recent survey, architects 'on average' spend almost 50 hours per project on code checking – with 11% spending over 100 hours.

Cobb said; "In the future, plans won't sit in a permit office waiting for a review. Architects and engineers will use the SMARTcodes™ integrated into their own design software to review their own plans and specifications for code compliance before they ever apply for a building permit. Building departments will also use SMARTcodes™ software to assist in a quick review."

Cobb added; "While one might think that 'automated code compliance checking' seems pretty futuristic,

remember that just a few years ago, we thought of ePermits in a similar way. Today, more than 35% of the permits issued by Metro Codes are electronically issued without the customer ever setting foot in our office."

David Conover described the SMARTcodes™ project; "We're just taking all the stuff that is in so many different formats and media (paper plans, electronic plans, specifications, permit software, code books, standards) and putting it into a digital data format that is readily used by all. We're putting it into one big file or lots of little files (structural, mechanical, etc.) that because of the data format can be easily combined and used with greater efficiency. The computer can be the designer's 24/7 plan review consultant".

## *A Message from the Director*

### Policy Change

**Effective July 1<sup>st</sup>, the Department of Codes & Building Safety will no longer accept applications for Plumbing, Electrical or Mechanical Permits over the FAX machine.** Customers need to make arrangements to apply in person or over the internet - using our ePermits system.

In August of 2007, the department added ePermits to our group of online services available to customers. Since August, the department has conducted 24 training sessions, which have been attended by more than 400 of our customers, to demonstrate how to apply for trade permits using our 'ePermits' internet site.

The ePermits service allows our customers to register with the department for secure access to the Codes internet system. There, a customer can make inspection requests, check the status of an inspection, view permit information, pay reinspection

fees, and apply for trade (MP&E) permits. Not only can a customer make application for a permit online, but they can also pay for the permit using a credit card and issue the permit to themselves.

Our customers have embraced the convenience of the ePermit system and the response has been tremendous. During the past 6 months, customers have applied for, paid for and self-issued 5,963 permits, online. Today, 35% of the trade permits issued by the department are processed online, using ePermits.

On or before June 30<sup>th</sup>, we will also be adding 'building permits' to the ePermit system. We will begin by adding 'residential' building permits for new home construction, remodeling, additions and alterations.

To register to use the ePermits system, contact Carla Langley-Smith by email at

[carla.langley@nashville.gov](mailto:carla.langley@nashville.gov)

## Codes & Building Safety Employees Recognized



*Left to Right: Plans Examination Chief Wade Hill, Edward Simpkins, Sid Hinkle, Charles Fortner, Property Standards Chief Jeff Castleberry, John Hargis, Steve Regen, Sandra Custode, Frank Jordan, Mayor Karl Dean, Plumbing Chief Inspector Dell Myers, Codes Director Terry Cobb, Jim Guscke, Scott Chaffin, Tim Rowland, Special Assistant to the Director Billy Fields, Building Chief Byron Hall.*

*Photo by Metro photographer, Gary Layda*

Mayor Karl Dean recently honored the Metro Codes and Building Safety Department for their efforts on behalf of the storm victims in Macon County. The ceremony, held at the Metro Fire Training Academy, recognized various metro departments who participated in the recovery and rescue efforts following the tornados which struck Macon County and the surrounding areas.

Employees from the Codes department performed damage assessments of the properties damaged in the storm. This is a critical activity

that must be accomplished in order to ensure the safety of residents and emergency relief workers. It also helps with the FEMA assessment of the severity of damage caused by the storm.

Billy Fields, Special Assistant to the Director of Codes, spent two weeks in Macon County assisting the Office of Emergency Management (OEM) with the distribution of relief supplies and in the coordination of the dozens of volunteers who responded to this weather emergency.

### **ELECTRICAL LICENSE RENEWAL NOTICE REMINDER**

It's that time of the year again to renew your 2008-2009 Metropolitan Davidson County Electrical License.

All Electrical licenses will expire on March 31, 2008. Failure to renew your license will result in a late fee per month if unpaid. Please remember that if your license expired on March 31, 2007, your license will be considered Null and Void effective April 1, 2008.

The Electrical License renewals were mailed on February 15, 2008. Enclosed with the Notice was a Renewal Notice Application which needs to be completed and submitted with your check and/or money order. Please make your check or money order payable to *The Metropolitan Government* and please mail the Renewal Fee to:

Department of Codes & Building Safety  
 Metro Office Building  
 800 2nd Avenue South  
 Third Floor  
 P. O. Box 196300  
 Nashville, Tennessee 37219

If you are unsure about the status of your license, please contact Ms. Sharon Stephens in the Administrative Office at (615) 862-6598.

## “Technically Speaking”

By

Jim Daly, Chief Inspector - Gas/Mechanical Division

### HVAC Duct Insulation in Commercial Applications

The International Energy Conservation Code regulates the design and construction of buildings for the effective use of energy. This code is intended to provide flexibility to permit the use of innovative approaches and techniques to achieve the effective use of energy. This code is not intended to abridge safety, health, or environmental requirements contained in other applicable codes or ordinances.

The requirements for duct and plenum insulation and sealing are given in Article 503.2.7:

**All supply and return air ducts shall be insulated with a minimum of R-5 insulation when located in unconditioned spaces and with a minimum R-8 insulation when located outside the building. When located within a building envelope assembly, the duct or plenum shall be separated from the building exterior or unconditioned or exempt spaces by a minimum of R-8 insulation.**

#### Exceptions:

1. When located within equipment.
2. When the design temperature difference between the interior and exterior of the duct or plenum does not exceed 15°F (8°C)

*Ducts and plenums must be constructed to meet the construction standards established in the International Mechanical Code (IMC) or equivalent. In addition to the requirements of the IMC, duct systems must also be insulated and sealed for compliance with the energy code.*

*All supply and return ductwork and air plenums must be thermally insulated as required by this section. Insulation requirements are described explicitly in terms of both R-value and location.*

The International Energy Conservation Code Commentary lists examples (locations within a building) and the required R-values for duct insulation in each example:

1. Supply and Return Duct on the Exterior of the Building. Exposed ductwork must

have a minimum R-8 insulation installed.

2. Supply and Return Ducts in Vented Attics and Vented Crawl Spaces must have a minimum R-5 insulation installed.
3. Supply and Return Ducts in Unvented Attics must have a minimum R-5 insulation installed.
4. Supply and Return Ducts in Exposed Shaft must have a minimum R-5.
5. Return Ducts in Indirectly Conditioned Ceiling Spaces would not be required to have insulation.
6. Supply and Return Ducts in Conditioned Space would not be required to have insulation.

#### Sealing Requirements for Ductwork

All HVAC supply and return air ducts, whether located inside or outside the conditioned space or in plenums, must be sealed. Although ducts in conditioned spaces do not need to be insulated, they must be sealed.

The code accepts a variety of methods and materials that may be used for sealing. However, the code does prohibit the use of unlisted pressure sensitive tapes. Only tapes with either a UL 181A or B label may be used depending on the type of ductwork.

**It should be noted that the code's requirements for sealing apply to “ductwork” and not to the insulation that surrounds the ductwork. The purpose for this sealing is to limit the amount of air leakage from the duct. The insulation manufacturer's instructions should be reviewed to determine its recommendations and appropriate materials for effectively sealing the insulation.**

## **NOTICE TO DESIGN PROFESSIONALS**

TRAINING OPPORTUNITY - Design professionals in the State of Tennessee have a rare opportunity to receive two days of training including courses in Non-Structural Plans Review and Special Inspections. These are International Code Council instructed classes being offered through the Tennessee Building Officials Association (TBOA) and all classes are approved for CEU through all design organizations.

Don't miss this rare training opportunity on April 21 and 22, 2008 at Nashville's downtown Double Tree Hotel. This is being offered as part of the TBOA Annual Training Conference.

Go to [www.tboa.net](http://www.tboa.net) to find conference and registration details or contact Linda Huey at [linda.huey@nashville.gov](mailto:linda.huey@nashville.gov) (615) 862-6554.

## **Mayor Names Assistant Director of ECD Office**

Mayor Karl Dean has named Nashville native Charlie Williams will serve as assistant director of the Mayor's Office of Economic and Community Development. Williams will serve under Paul Ney, director of the office, and alongside Marilyn Edwards, director of special events. He is currently a business banking relationship manager with First Tennessee Bank. Before joining First Tennessee in 2003, Williams ran his own business involved in international trade for six years.

"Charlie knows Nashville, he knows the business community and I'm certain he will serve my office and our city well as we work to grow our economy in balance with the needs of the community at large," Mayor Dean said. "He will be part of a dynamic team with Marilyn, who oversees dozens of special events in our city which attract visitors and bring Nashville residents together throughout the year, and Paul, who has already made much headway in his short tenure. I look forward to celebrating their accomplishments in the months and years ahead."

Williams received an M.B.A. from the University of Oklahoma where he was a Rath scholar, after graduating summa cum laude with a bachelor's degree from the University of Tennessee. He is also a 1991 graduate of Montgomery Bell Academy. Williams' community involvement includes sitting on the boards of Fannie Battle Day Home for Children, the Margaret Maddox YMCA, and the Neighborhoods Resource Center. He is also a past member of the Board of Zoning Appeals.



## Tree Topping Hurts Trees

The practice of topping is so wide spread that many people believe it is the proper way to prune trees. However, topping can cause a variety of problems in trees, and ultimately cause problems for homeowners.

### Topping and Pruning: What's the Difference?:

*Topping* is the excessive and arbitrary removal of all parts of the tree above and beyond a certain height with no regard for the structure or growth pattern of the tree.

*Pruning* is the selective removal the practice of topping is so wide spread that many people believe it is the proper way to prune trees. However, topping can cause a variety of problems in trees, and ultimately cause problems for homeowners

### Tree Topping Myths:

- **The tree is too tall** - This indicates either poor species selection, improper tree placement, or fear that the tree might be dangerous in storms.
- **Topping reduces the risks of storm damage** - The reduction in height reduces risk temporarily, but as the tree re-grows, it is structurally weaker and the risk becomes greater.
- **It produces a denser shade** - The shade may be denser in a small area, but the overall shading potential is reduced.
- **It has to be topped because of power lines** - Tree and power line conflicts may be resolved by proper species selection, better placement or different pruning technique. Remember: power line clearance benefits the lines, not trees.

### Problems Caused By Topping:

- **The balance between roots and crown is destroyed** - Removal of too many branches and leaves can starve trees. Without foliage trees cannot make enough food to maintain growth and vigor.
- **Sunscald can occur** - Bark tissues suddenly exposed to full sun may be burned and develop disease cankers.
- **Large stubs can't heal** - Stubs are separated from food and water flow. As tissues die, wounds

don't seal, and decay may enter and spread to the trunk.

- **New growth is weak** - New sprouts are attached to the surface of stubs rather than being anchored from within former limbs.
- **Topping can create a hazard** - Storms do more damage because the new growth is weakly attached
- **Topping disfigures trees** - Topping alters trees' natural beauty and form.
- **Topping is only temporary** - Trees will grow to their natural height. Rapid re-growth is nature's way of recovering from disasters, and frequent topping will be required to keep a tree under control.

### **ALTERNATIVES TO TOPPING:**

Select the right tree, and plant it in the right place. A tremendous selection of trees is available. One can be found that will grow to just the right size. Avoid power lines and other hazards.

Remove the tree and replace it. If removed, then follow the right tree in the right place guidelines.

Prune the tree properly. Proper pruning removes limbs where they are attached to a larger branch or the trunk. Selective removal of limbs reduces the wind resistance of the tree. It also allows some light to penetrate the crown. Proper pruning improves the shape and balance of the crown.



### **SUMMARY:**

The practice of topping is not recommended. It can lead to decay, storm damage, and disfigured trees. Proper pruning that thins the crown, with cuts made at branch collars, is the best practice for the long term health of trees.

### **PROPER PRUNING:**

The light gray limbs represent branches that have been removed. The crown has been thinned to reduce wind resistance and improve tree health without leaving stubs or changing the natural shape.

# Employee Highlights

## JOHN TYLER

A large role of blueprints stretch across his drafting table as he considers various aspects of a new development planned for Nashville. For some, this would prove to be a challenge, for John Tyler, this is just another workday.



As one of Metro Codes and Building Safety’s plans examiner, he is tasked with review plans for new construction as well as rehabilitation. He will spend time making sure that all aspects of the project meet the building, plumbing, HVAC and electrical codes. Obviously, some of the projects are simpler than others, but all require a careful review because this is serious business.

He said the process is relatively simple, but there is one major requirement for those submitting plans.

“We need good detailed plans that show everything you want to do in a project,” Tyler said.


He said he and the other plans examiners work with professionals as well as non-professional when reviewing their projects. He said it takes a bit more time for the non-professionals, but it is part of what is expected. He said they are there to help each person have the safest and compliant project possible.

He said the work has changed much other years since he joined the staff in 1195.

“But there has been an increase in the volume of projects being submitted. There seems to be many more smaller projects coming to us now than in past years,” Tyler said with his characteristic smile.

Before coming to Codes and Building safety, Tyler work for the Tennessee valley Authority as a member of the nuclear design division.


A product of Goodlettsville High, Tyler is a civil engineering graduate of Tennessee State University. In addition, he did graduate study at the University of Tennessee in Knoxville. When not working, Tyler enjoys volunteering at his church, Gordon Memorial United Methodist Church, as well as traveling and reading. As a youth, Tyler attained the rank of Eagle Scout.



**PASS IT ON!**

Pass the word about our newsletter! We would be honored if you would share our newsletter with your colleagues and co-workers. If anyone would like to sign up to receive it themselves, they just need to send us their email, and we will be happy to “Pass It On” to them.

**Terry Cobb** and **Wade Hill** welcome your feedback on our e-newsletter. Please send your comments to [Wade Hill](mailto:Wade.Hill@nashville.gov)  
Plans Examination Chief , 862-6520



For information regarding accessibility, please contact Manley Biggers at (615) 862-6521 or fax (615) 862-6499. He can also be reached at [manley.biggers@nashville.gov](mailto:manley.biggers@nashville.gov)

Department of  
Codes & Building Safety

Metro Office Building  
800 2nd Ave., South  
Nashville, TN 37210  
615-862-6590 / Fax 862-6593

Mayor—Karl F. Dean

Director—Terrence Cobb

Office Hours: Mon-Fri / 7:30-4:00

