



By Bob Graves

The International Code Council (ICC) develops and publishes codes and standards used to construct residential and commercial buildings throughout the world. The ICC also publishes CALGreen (California's green building code) and has a long history of involvement with state of California. Recently, Bob Graves, president of Green Technology, discussed CALGreen's contribution to green code development for the rest of the country (and beyond) with Mark Johnson of ICC. Johnson serves as ICC's Senior Vice President of Publishing & Product Development and President of ICC Evaluation Services.

California is the first state with mandatory green construction regulations. This represents a major move from voluntary systems to code, and creates a baseline mandate for sustainable construction. Can you tell us a bit about how this came about and how you view this in terms of the world of code?

The key driver for green construction codes is a demand from the citizens, elected officials, the building industry and other stakeholders to look at ways to use our limited resources in the most efficient and effective manner. The issues related to energy and limits to its supply have been key drivers as well. Within the code community, the movement to enhance energy efficiency in buildings goes back to the early 1970s, starting with the [Model Energy Code](#). Of high importance, from a regulatory perspective, is the need for a consistent and uniform set of minimum requirements that jurisdictions can use as a baseline.

If ICC and states like California do not take a leadership role, you could see inconsistency and non-uniformity in green regulations driven at the local level that are not harmonized with other building construction codes. This lack of consistency not only handicaps industry and supply issues, but acts as an impediment to enforcement in the areas of training and other professional development. Also, in these hard economic times where budgets are being slashed, it makes little sense for jurisdictions to start from scratch in the development the green construction codes. Codes like California's [CALGreen](#) or the [International Green Construction Code](#) by ICC provides communities a minimum baseline to build on that is based on expert input and enforceable language.

I would imagine the building community would prefer to know they could build on a consistent basis across the country.

Yes, and that's critical. A consistent and uniform baseline makes it much easier for code compliance for the design community. In this economy, more than ever, resources are limited and budgets are tight. We have to pool our expertise, at both the national level

and at the state level and benefit from this knowledge. We know that costs for green design and construction are dropping as common practices across jurisdictional boundaries are becoming more the norm. We also can best take advantage of best practices as a training tool when there is consistency in the codes.

ICC is developing a national green model code, the International Green Construction Code (IGCC), which will provide a coherent and consistent baseline for the entire country, really a huge evolutionary step. How is CALGreen influencing this process?

CALGreen, an important pioneer code, served as a resource in the creation of the IGCC. But to be completely accurate, the IGCC is really built on the work of many organizations and advocates that have been engaged in creating a more sustainable built environment. The IGCC is not designed to compete in any way with CALGreen or the LEED program or to minimize them. The IGCC is designed to build upon documents like CALGreen and the LEED program.

How would you characterize the history of the USGBC LEED program in conjunction with the IGCC?

LEED [Leadership in Energy and Efficient Design, a certification program by the U.S. Green Building Council] did an outstanding job in helping to bring about sustainability in construction, but it did so primarily at the high end of the market. With certain selective commercial buildings LEED was very successful. But this is a limited percentage of our whole building stock – With LEED being a voluntary program, the USGBC estimates that no more than 20 percent of the building stock in any one jurisdiction has the potential to be impacted. The goal of documents like CALGreen and the International Green Construction Code is to address the needs of the majority of buildings by setting a minimum mandatory baseline with higher tiers or compliance options that allow jurisdictions to enhance the level of sustainability at their discretion. That's the advantage of a mandatory code approach versus a purely voluntary program like LEED.

Now with the USGBC participating as part of the IGCC coalition, there is an opportunity to maximize the "push/pull" effect of LEED and the IGCC. What this means is that as LEED continues to push construction toward the latest in cutting-edge approaches, it will pull an entire community toward establishing the IGCC as a baseline. The USGBC has publicly stated that the advent of the IGCC frees LEED to more appropriately function as the tool it was originally designed to be.

Are you finding a resistance to this new direction and if so, how do you begin obtaining support for the new code?

We're finding excitement, but at the same time, resistance in the form of trepidation. This is new and there's a lot of training needed. People want to have immediate access to training and education more than anything else. The state of California, quite frankly, is going to be the incubator by introducing a mandatory, regulatory green construction code to the marketplace. There is a tremendous opportunity to educate not only the code official, but also architects, engineers and contractors that have to comply with codes. The resistance will subside or dissipate once education is provided.

One thing that is different here is that there is a public expectation that their leaders will move the ball forward in this area. We have had requests from our member jurisdictions to develop a code because they want something that is written in a recognizable and enforceable format that integrates with and reinforces the basic safety provisions of our other codes. The engagement with our code is coming from a much broader spectrum than what we normally see with our other codes, and we're setting records in terms of interest ranging from tens of thousands of downloads to higher viewing audiences of our webcasts of public hearings.

I suspect you've seen this cycle occur many times in your history with ICC. This is a new code but it does integrate with other existing codes and in that sense is an evolution - it's not an entirely new thing. Would you say that's true?

Yes. A strong point for the IGCC in particular is the fact that it's coordinated and correlated with the family of international codes. CALGreen has also been coordinated with other parts of the California codes. This coordination factor makes it easier for the enforcement community as well as the design community.

ICC is run by code officials. Can you give insight into why they are directing this code change right now and the underlying factors influencing it?

There has been a movement afoot among local communities to create green regulations

and ordinances. Green regulations are being driven by our members as well as the design community, such as groups like AIA [[American Institute of Architects](#)], and others. I think what happened is that our membership saw this at the grassroots level and realized that, as part of ICC, they could harness all of these resources throughout the US, create a national model and save a lot of time, energy and effort. This national model can then serve as the basis for state or local regulations. There was the recognition that if you're going to come out with a green construction code it's critical that it be in harmony with existing codes that are being used nationally. For instance it was very critical that a green construction code didn't contain provisions that would be in conflict with fire requirements contained in building and fire codes. It was also important that there weren't clash points with regards to structural safety. I think this was recognized early on.

ICC, as an association working with others in the industry, serves as a conduit to provide a national, and hopefully international, model – but also a system to support the adoption, adaptation and implementation of this code.

The development and adoption of the IGCC includes government officials and manufacturers as well as the design and construction community. How does this process work so that these voices are all included and the end document is something that achieves consensus?

I think where we start off is with public involvement. Anybody can submit a code change to any of our model codes, including the IGCC. We solicit input from all avenues. We also conduct our meetings in an open hearing which allow for complete transparency. Anyone can testify, whether you're a member of ICC or not. Our committees are balanced, and made up of experts beyond just the code community and code officials. Also as an international organization, we put together a process that allows broad-based participation globally. The final vote on the code changes resides in the hands of one segment of our membership – code officials. Committees are balanced, but the final vote is in the hands of the regulatory side of the equation that ensures public safety is the priority.

We have expanded our outreach efforts to make sure that some of the constituencies newer to the Code Council understand our process, such as some of the public interest groups like the [U.S. Conference of Mayors](#), the [National League of Cities](#) and the [National Governor's Association](#). We also have an impressive coalition as cooperating sponsors which casts a wide net to a number of different disciplines: the AIA, [ASTM International](#), [ASHRAE](#) [American Society of Heating, Refrigerating and Air-Conditioning Engineers], the USGBC and the [Illuminating Engineering Society](#).

When is the IGCC going to be available?

The IGCC is currently available as Version 1 for jurisdictions that are in the process of developing their own green construction codes. They can use this version as the basis for their local or state regulations. Version 2 will be publicly available and posted online November 2 of this year.

The 2012 edition of the International Green Construction Code will come out in early 2012 and will be coordinated and correlated with the other members of the ICC family, like the International Energy Conservation Code, the International Building Code, International Residential Code, and others.

Some jurisdictions won't wait until 2012. There are jurisdictions right now that are looking at Version 1 and will be looking at Version 2 to utilize as the basis of their local or state codes. The City of Richland, Washington, has adopted the IGCC as an optional requirement for new construction, and the State of Rhode Island has given the IGCC "equivalent compliance" status for public buildings.

I'm assuming that like CALGreen, IGCC is only for new construction. Do you see it extending into existing building stock and modernization of buildings?

The International Green Construction Code addresses both new and existing buildings.

We have heard some statements in the course of our outreach and education efforts on CALGreen that this isn't the best economic time to introduce additional regulations. How would you respond?

I would disagree with that statement. I think it's narrowly focused – these green construction codes actually could be an opportunity for growth. In terms of integrating new techniques and methodologies into sustainable construction, I think there's great opportunity for manufacturers with new and innovative products. Without codes that address sustainability requirements, there could be push back from regulators who have

no basis in which to approve a better building product. Without some regulatory baseline, new and innovative products might not ever get accepted into the construction marketplace.

Additionally, I would argue, is that it's going to make us more competitive as a nation because we can't continue to deplete our scarce resources in a non-intelligent manner. By being better stewards of our environment we'll be more competitive as a nation as we move forward.

I can't agree that it's bad to introduce the code in this economy. There are a lot of people who would argue that the best time for innovation is during a recession.

Lastly we are seeing that the upfront costs of green construction are now close to the costs associated with traditional construction. If you factor in the lifecycle costs of the building and the reduction of negative impacts on the site and the environment, green construction is less expensive to building owners and others than traditional construction. Every study of economic growth indicates that green construction is a driver for jobs and other positive factors in the next five years and beyond.

We're seeing the use of innovative products encouraged by IGCC and CALGreen. How do we know that these products are better? How does a building official know that they meet the standards, and how does a builder know that he's putting a product in that really is more sustainable?

ICC is not in the business of evaluating which product is better from a qualitative standpoint. We're looking at which products meet the minimum requirements of our codes and standards. That's what's critical for us. We do that through a business entity that is part of ICC, a limited liability corporation called ICC Evaluation Service [ICC-ES]. We look at manufacturers' test data, technical calculations, reports, and evaluate these products for compliance with codes such as the IGCC and CALGreen. The result is a third-party evaluation. You have a credible source that is ensuring new products meet the minimum requirements of the code.

What's unique about ICC and ICC-ES is that we don't have a proprietary interest in the outcome. As a model code organization, our primary mission is public safety. So it is easy for us to say, if a product doesn't comply, we're not going to issue a report on it. It's that simple.

We have a purity of process that separates us from other entities that certify, evaluate, or list products. When somebody comes to ICC-ES to look at a third-party review they know that the product meets the minimum requirements of a code. This is definitely a tool for manufacturers who want to get their product accepted. Instead of going to one building department at a time, to convince that building department that their product is code compliant, they can come with a widely accepted report issued by ICC-ES.

How do developers and building officials access this information – from the manufacturers directly?

No, actually it's quite interesting. The compliance reports we issue, as well as the normative documents upon which these evaluation reports are based are accessible and downloadable online for free for the code official, the design community, the public at large. There's no charge. They can download them. Code officials have access to them and they're kept current.

Additionally, we've linked these reports into our electronic version of the code to make it easier for the regulatory community to have access to these reports, as well as designers and specifiers that are looking for code-compliant materials and products.

Can you describe what the "normative documents" are?

Yes, let me give you an example. Let's say there's manufacturer that's developing a new product or system. Normally when you're dealing with innovation, the codes and standards will either be silent regarding that particular system or product, or do not provide sufficient coverage because a product is new or simply falls outside the spectrum of the current codes and standards. So what we do, using an open hearing process, is provide manufacturers guidance on what they need to comply with to achieve equivalency to our codes. The normative documents that are being created through this process are called acceptance criteria. It's really a twofold effect. One, it establishes a technical basis for equivalency in compliance with the international code, and two it creates a level playing field for all manufacturers.

This would create new acceptance criteria, and manufacturers would need to ensure their products fell within the values of these criteria.

That is correct. These acceptance criteria or guidelines are designed to work with existing codes or standards where available. There might be a certain aspect that a manufacturer wants verified for code compliance, and this document would establish that baseline. These guidelines and acceptance criteria define reference standards. If there's not a standard available, they might actually create one by working with industry, laboratories, and manufacturers. Many of these acceptance criteria or guidelines are the basis for future standards.

This would seem to imply that with the IGCC coming out there is the likelihood that you're going to have a whole flood of new products and acceptance criteria.

I would think so because existing products that haven't had to address sustainability requirements will have to be evaluated to see that they're not only structurally sound and safe from a fire and life safety standpoint, but also verified that they also meet the sustainability requirements. Then there's the issue of innovation and new products that are coming to the marketplace, where manufacturers will want to show compliance with either the International Green Construction Code or the codes like CALGreen at the state level.

Traditionally ICC has been focused on public safety issues. Now there is potentially a relatively large shift over towards sustainability and sustainable construction. How do you see that shift coming back and influencing your organization itself, and its values and perspectives?

It's really an evolution as opposed to a shift. I think we're taking a more holistic look at the role of codes and standards. In the past we looked at such things as structural safety, sanitation, and fire and life safety. How stable, safe and healthy will our citizens be if you're not addressing some of the needs of sustainability? And what is our future going to look like from a public safety standpoint if we don't take actions now to define the best way to utilize our limited resources?

We're taking a longer-term view with regards to codes and standards, we're looking at the life cycle of building and how important that is. It may be cheaper in the short-run to do something with a building, but there are long-term ramifications that need to be considered as well. If we don't address our limited resources today, what's going to be the cost to us tomorrow and to future generations? How safe are our buildings going to be in the future if we don't take a more environmentally sound approach today? You have to look at every aspect of the building in terms of the health and wellbeing of its occupants. And at the end of the day it's all integrated – you have to incorporate safety provision into those laws that govern green construction.

We're taking a much broader perspective that will serve not just this generation, but future generations as well.

