



ICC's Interoperability Project



Use of information technology to deliver more efficient and effective public services and enhance public safety

The Big Picture

To design, construct and maintain any building requires many steps. From cost estimates, plan review and inspections to operations, maintenance and demolition, a large amount of information is collected and used during the life of a building; some of it related to building regulations.

There is a growing need for communication and collaboration via software systems without each having to reformat or reenter data. Designers want information related to code compliance and the ability to access data across jurisdictional boundaries. Building managers want to use building information models (BIMs) to create and maintain building records. Building regulatory authorities want to review and approve building plans more effectively, in less time and with greater accuracy. As other industries shift to automated processes like the automotive and aerospace industries have, the opportunities to enhance communication and collaboration across the building industry will become even more apparent. Such sharing and using of information across various interests and disciplines is termed "interoperability".

The Opportunity

Through "interoperability" building regulatory authorities have a foundation for a more cost-effective and efficient means of ensuring building safety. Building officials, the fire service, building owners, specifiers, designers and others would benefit from the ability to automatically check plans and specifications against building regulations. Coupled with software to track permit records and inspections as well as a connection to additional code-related information such as standards, product evaluation reports, interpretations, manufacturer's data sheets, and product test report data "interoperability" presents a significant opportunity.

Why Interoperability

In many regulatory agencies, building data is compiled by hand and stored in a file, or keyed into a computer after receipt from designers, building owners and others. Typically the computer systems may not easily interact with those of other agencies or private sector data sources because each prepares and presents their information in different formats that are not "interoperable". For this reason data cannot be readily transferred between or within city agencies and outside sources such as designers and builders. Through "interoperability" automated plan checking is feasible and as a result government will be able to provide seamless and more timely communications, improve efficiency, save money, make more accurate and informed decisions, reduce approval times, enhance reliability and quality, improve public safety and provide greater value to the public.

buildingSMART and ICC

The International Alliance for Interoperability North America (IAI-NA, www.iai-na.org), a Council of the National Institute of Building Standards, is leading an initiative called buildingSMART that will simplify access to and use of building information. IAI has developed a standard format to enable information sharing and interoperability during all phases of the building life cycle.

While IAI is looking at the big picture, the International Code Council is leading an effort in the U.S. to automate the process of checking building plans and specifications for compliance with adopted building regulations. Research sponsored by ICC is underway and has resulted in the development of a protocol and software for presenting the code criteria in an “interoperable” format. Through the availability of a BIM for a proposed new building or changes to an existing building, it will be possible to automatically identify project-relevant code criteria and automatically check the design against those provisions. The output of this process will include code checklists and a print out of the project-relevant code provisions. The BIM will also be available for 3D visualization with the areas of non-compliance automatically identified and shown. A demonstration of automated code checking will be available in late 2006 on the ICC International Energy Conservation Code and in 2007 other I-Codes will be added.

Further Information

For additional information concerning ICC’s Interoperability Project or to explore opportunities to collaborate with ICC contact David Conover at dconover@iccsafe.org 1-888-iccsafe x 6244 or Terry Eddy at teddy@iccsafe.org 1-888-iccsafe x 3233.