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INNOVATIVE PRACTICE

Georgia's Disaster Resilient Building Construction Appendices

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SUMMARY

After damaging windstorms in 2008, the Georgia Department of Community Affairs (DCA) created the [Disaster Resilient Building Construction \(DRBC\) appendices](#) to the International Building Code (IBC) and International Residential Code (IRC), which form the basis for building codes in most U.S. jurisdictions. The DRBC appendices offer an affordable, flexible, and simplified approach to improving resiliency at the local level.



FEMA worker and damaged Georgia home.
(Source: Robert Kaufmann, FEMA,
<http://www.fema.gov/media-library/assets/images/52583>)

DESCRIPTION

The two 2008 Federal disaster declarations from storms in Georgia led to state and local efforts to better understand and improve building resilience. In 2011, the U.S. Department of Housing and Urban Development (HUD) awarded DCA a grant to examine the state's existing building code and develop new voluntary DRBC standards to improve disaster resilience statewide.

Georgia DRBC Task Force

DCA established the DRBC Appendices Task Force to develop the appendices. The Task Force consisted of 19 stakeholders and a subcommittee that included:

- Building and local fire officials;
- Homebuilders;
- Residential design experts;
- Building codes experts who assisted in developing Florida's building codes;
- Representatives from the wood, steel, and concrete industries;
- Representatives from private sector industries and associations;
- Representatives from key Federal agencies; and
- Community members.

The Task Force aimed to create a simple tool that could be quickly appended to building codes in a variety of communities to strengthen buildings without threatening affordability. To do this, the Task Force focused on improving standards related to wind, flooding, and storm shelters. The appendices became available for voluntary adoption by jurisdictions—

through local amendment processes—on January 1, 2013. The cities of Kennesaw and St. Marys were the first jurisdictions to adopt the appendices, completing the process in November 2013 and April 2014 respectively.

How Local Jurisdictions Can Apply the DRBC Appendices

The DRBC appendices apply to any new construction, addition, or renovation project that requires a permit. Local jurisdictions can adopt the complete appendices to improve building resiliency against flooding and high wind damages, or they can adopt select sections that apply to specific hazards in their geographic area. To assist in the adoption process, each appendix includes a sample ordinance template that local officials can complete. In addition, the appendices include sections on emergency inspection, disaster resources, and building safety assessment to assist local codes and inspection departments with disaster response and damage assessment activities. The Task Force added these sections to assist jurisdictions that lack the resources to develop these types of processes and tools on their own.

The appendices are “code plus”, meaning that upon adoption they mandate structural resiliency beyond the baseline set by the International Code Council. As such, adoption of the appendices is optional for local jurisdictions. This optionality, along with the appendices’ flexibility and simplicity, allows local Georgia communities to implement a code system that best addresses their individual resiliency requirements.

Selecting Affordable and Practical Resilient Construction Methods

Georgia’s approach to developing the appendices, unlike most building codes, included prescriptive instructions for residential construction that met the same wind speed resistance requirements as codes written for more technically proficient audiences. The Task Force designed the appendices using plain language, pictures, and diagrams geared toward those without extensive engineering or architectural backgrounds. This allows homeowners and homebuilders to use the appendices as a set of plans for resilient home construction, even when their local government has not adopted the appendices.

Other states can use Georgia’s affordable and practical approach to improve local resiliency through building construction. Additionally, Georgia developed comprehensive training workshops, conducted at the local level, to educate stakeholders on how the appendices provide guidelines for disaster resilient building practices specific to community needs. The LLIS [Georgia Training Workshops for DRBC Practices](#) document provides additional information.

Appendices in Action: Determining Specific Resilient Construction Methods

An engineer with the Engineered Wood Association researched types of housing damage caused by the 2011 tornado outbreak in the Southeastern United States and documented that damage in “Tornados of the South.” The engineer found that high tornado winds separated many houses from their foundations and that tying the load-bearing portions of the houses to the foundation addressed the issue. The DRBC appendices included simple guidance for contractors on this in the prescriptive method section. This helped address common weak links in housing construction and provided contractors with an easy reference for building houses with greater wind resistance.

REFERENCES

Dee Leclair, RA, Disaster Resilient Building Construction (DRBC) Project Manager – Georgia Department of Community Affairs. Bill Towson, Architectural Consultant – Georgia Department of Community Affairs. Personal Interview. January 13, 2015

Dee Leclair, RA. Georgia Department of Community Affairs. *Disaster Resilient Building Construction (DRBC) Appendices Webinar*. April 15, 2013

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