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School Design & Tornado Protection Cause for Concern?

Bob Roberts

Emergency
Manager



“You can't teach in an unsafe, potentially dangerous situation. If you aren't taking steps for mitigating, you are morally and legally at fault.”

If you're not prepared to expect the unexpected, you're rolling the dice.”

Bob Roberts

Emergency
Manager

Peter Anderson, Los Angeles
Unified School District

The deadliest school tornadoes

Date	Location	Time	Fatalities (school)
Mar 22, 1897	Arlington GA	08:30	8
Jan 11, 1918	Dothan - Cowarts AL	13:40	8
Mar 1, 2007	Enterprise AL	13:10	8
June 28, 1865	Viroqua WI	16:00	9
Nov 16, 1989	Newburg, NY	12:05	9
May 2, 1929	Rye Cove VA	12:25	13
Apr 21, 1967	Belvidere IL	15:50.	13
Nov 9, 1926	La Plata MD	14:35	14
Jan 4, 1917	Vireton OK	11:00	16
Feb 1, 1955	Commerce Landing MS	14:20	23
Mar 18, 1925	MI/IL/IN (9 schools)	13:01	69



Bob Roberts
Emergency
Manager



Does modern design & construction make for safer schools?

- ◇ “Open” construction
- ◇ Lots of windows for natural light
- ◇ Long, open hallways
- ◇ Modular, “wall-less” classrooms
- ◇ “Trailer” classrooms



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Unreinforced interior (and sometimes exterior) walls, especially in structures built before 1970

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Non-reinforced interior walls in this area of Kelly Elementary collapsed after the roof system was removed by vortex winds



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"The whole building just collapsed on everybody," said a student at the school. "A bunch of people were trapped under cinder blocks..."

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Enterprise AL, 2007



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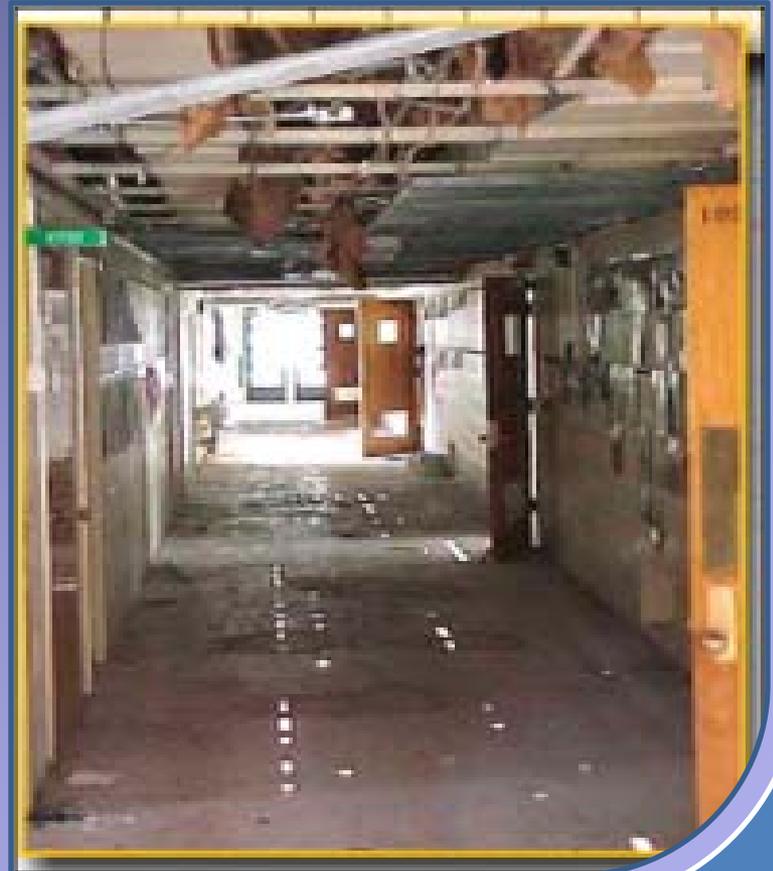
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Before & After



Designated corridors for tornado drills in the Wichita KS Public School District.



Bob Roberts

Emergency
Manager

(May 3, 1999)



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Joplin High School Security Cameras



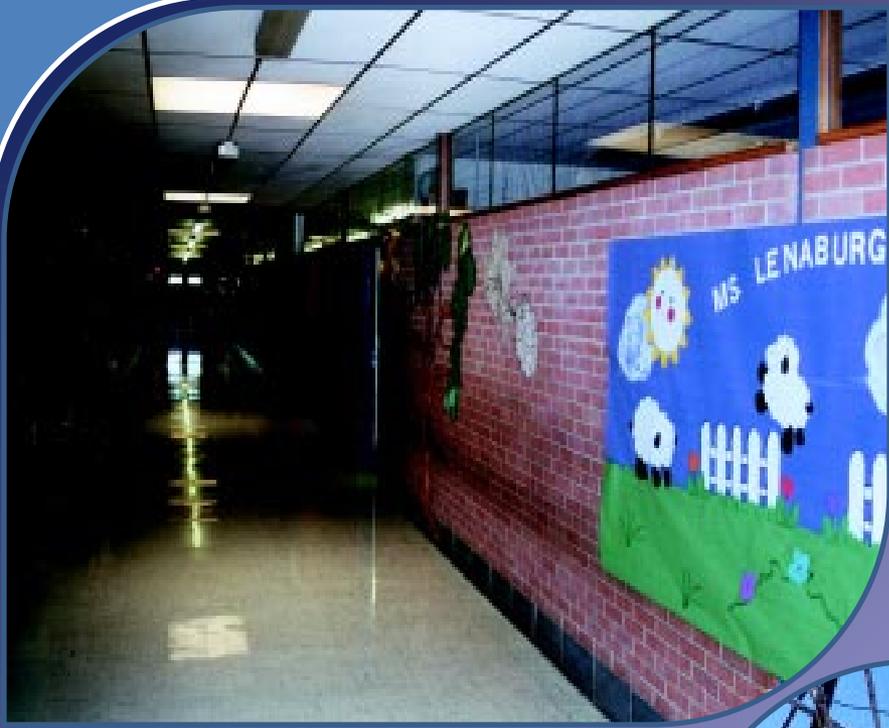
CBSNEWS.com

Bob Roberts

Emergency
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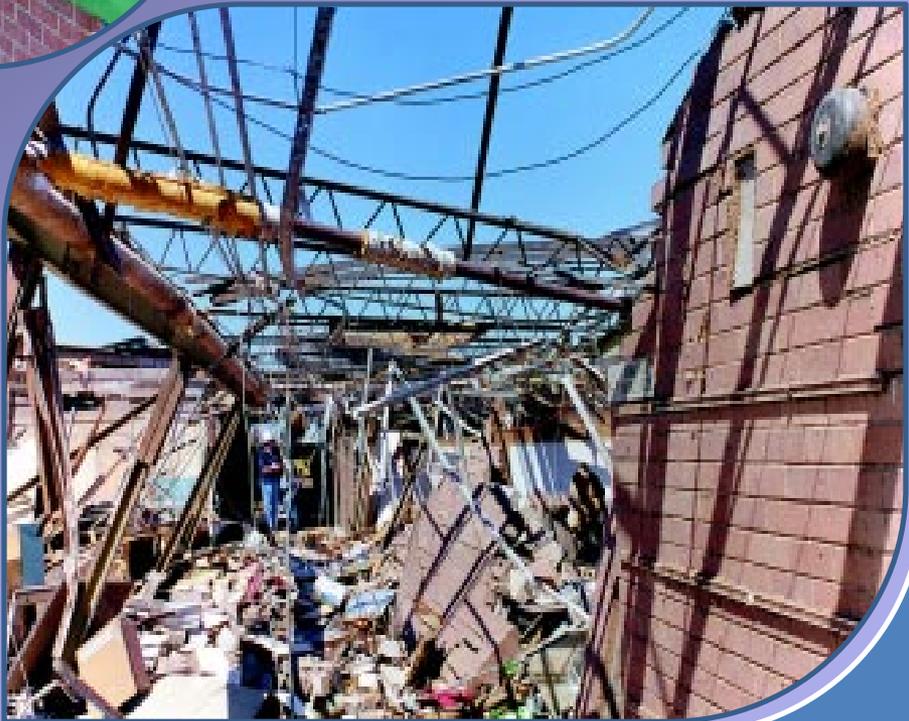
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Clerestory windows in Northmoor Elementary in Moore. This was a designated shelter area for the school.



A similar corridor at Kelly Elementary in Moore. Masonry up to 7 feet, topped by clerestory windows.



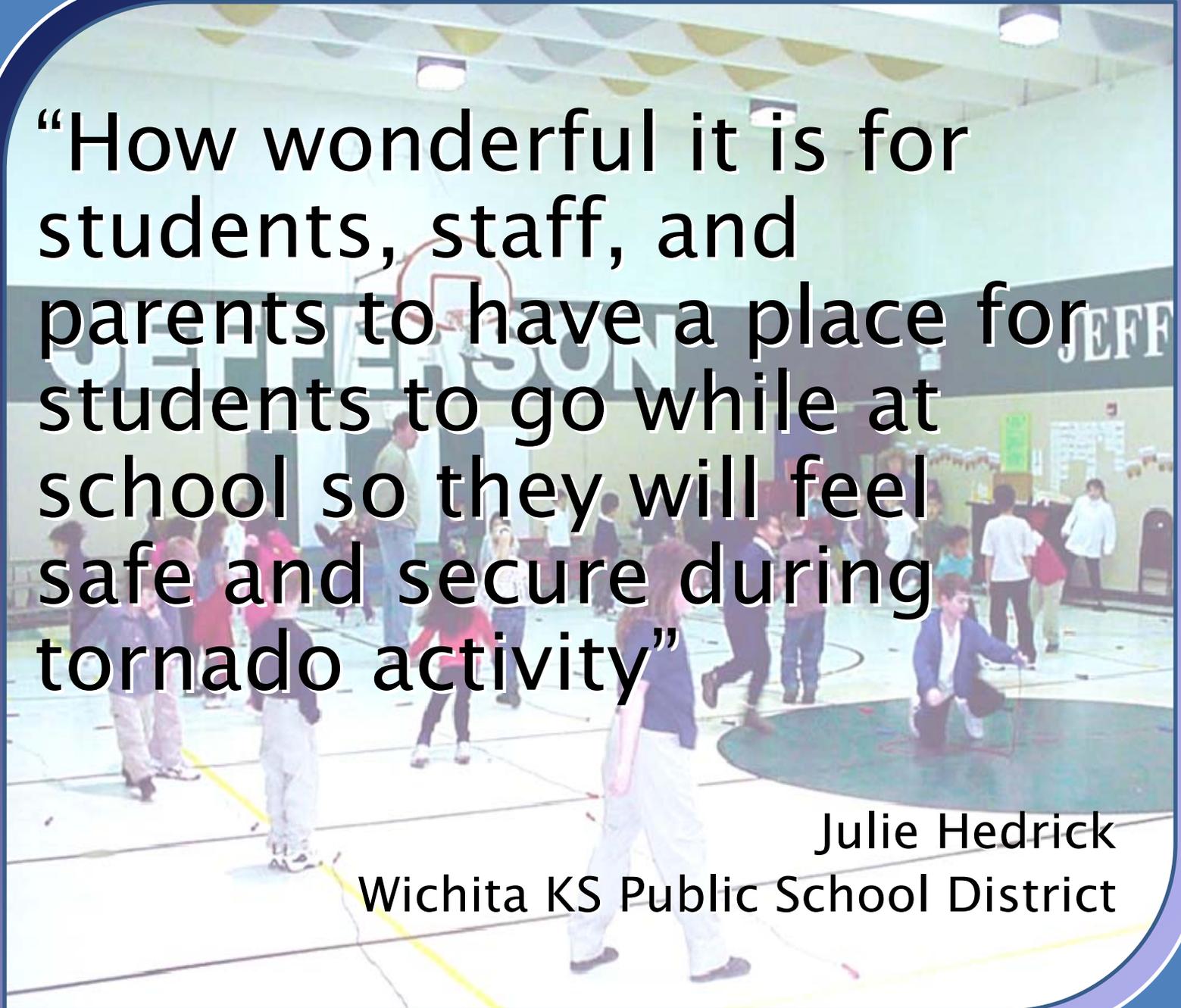
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“How wonderful it is for students, staff, and parents to have a place for students to go while at school so they will feel safe and secure during tornado activity”



Julie Hedrick

Wichita KS Public School District

Bob Roberts

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Thank you



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