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A louder Big House

Prof's test says skyboxes will increase noise level at games

**By Elaine Lafay, For
the Daily on 11/1/07**

The addition of luxury boxes to Michigan Stadium will make it louder, according to tests by a University professor.

During halftime at Saturday's football game against Minnesota, Mojtaba Navvab, an associate architecture professor, and other researchers measured sound in Michigan Stadium at the 50-yard line to predict what impact the planned renovations will have in making the stadium louder.



A group of scientists tested sound levels in Michigan Stadium during halftime of Saturday's game against Minnesota. They said the student section is about as loud as a chain saw.

(RODRIGO GAYA/Daily)

Sound often evaporates into the air at The Big House, which has a reputation for being a relatively quiet stadium despite touting the nation's largest crowds. Because there aren't many things for the crowd noise to reflect off of, the oval-shaped bowl loses sound.

The skyboxes would amplify the sounds of the crowd by further enclosing the stadium, causing sound to bounce back onto the field instead of escaping.

In a press conference in September, Penn State wideout Deon Butler said the noise and intimidation factor at The Big House were low for a stadium of its size.

"It's not a super-overwhelming place," he said. "Yes, it's large, and they're supposed to have more people than us, but it's not overwhelming in the sense that it's not as tense as Beaver Stadium. Their fans aren't near as rowdy as our fans."

When Navvab and his team took measurements during Saturday's halftime, they found that the sound - almost exclusively from the student section - was 100 decibels, or the equivalent of a chainsaw.

With the skyboxes, which will stand about 10 feet higher than the scoreboards and further enclose the stadium, the sound level of the stadium would reach 110 or 111 decibels, about the noise level of a loud rock concert, Navvab said.

In order to measure how much of an impact the skyboxes would have on sound in the stadium, Navvab used a sensor that measures sound from all angles at the same time.

The sensor consists of 120 small microphones that absorb every decibel within hundreds of feet. The device can pinpoint exactly how much sound individual people and instruments make in a crowd of thousands.

Navvab and his team then took what each individual microphone measured, compiled it and used a computer program to translate the measurements into architectural graphics that allow the researchers to see exactly where the sound is located and where it is loudest.

During the game, Navvab and his team measured crowd noise levels from various points along the sidelines.

There were other factors that Navvab had to take into account when measuring, such as the duration of the yells from the crowd.

Navvab used the sensor to measure how long it took the crowd to reach "full loudness," the point at which the noise intensity level remains steady.

Crowd participation was almost entirely located in the student section. If all 109,840 individuals had yelled at the same intensity, Navvab said the measurement would have increased to 102 or 103 decibels - a significant sound increase.

The loud noise from the crowd can drown out the sound of the opposing quarterback giving instructions to his players on the field - giving the home team a significant advantage.