

The Sonic Plaza

Galil Automates Extraordinary Artwork



It's almost midnight on campus and a group of college students are walking back to their dorm rooms after a long night of studying. As they move toward the University's plaza entrance, they pass through the library's columns and are surprised by sounds that emanate from overhead, creating a consonant harmony that changes in pitch and timbre. They look towards the plaza and see a large misty cloud with a huge clock tower looming above. Lights flash, and a kaleidoscopic video begins bouncing between 12 monitors arranged around the clock face. The classic circus song, *Entry of The Gladiators*, begins to play overlaid by a man reading a poem about time and space. Then, slowly, from the center of the clock, a jester's head lighted from beneath moves into the night, alerting them that midnight has arrived! And if that's not enough, as they pass through the cloud and walk by the clock, they are immediately greeted by a wall of water that dances to music and keeps pace with their movement. What is it? It's the Sonic Plaza!

The Sonic Plaza was commissioned in 1991 by the North Carolina Arts Council with the objective of placing diverse artwork where people gather, live, work, play, and learn, throughout the state. Christopher Janney, an internationally known sound artist, was selected to design the multimedia artwork piece within the fabric of the plaza. Janney decided to incorporate student work from the Universities' fine arts, communication, and music and dance departments into the design. Janney says the Sonic Plaza was "designed to activate the plaza and provide transitions from new to old".

The Plaza consists of four different elements: the Sonic Gates, the Media Glockenspiel, which is controlled by a Galil motion controller, the Percussion Water Wall and the Ground Cloud.

Within the plaza's 85 foot clock tower sits the Media Glockenspiel. Unique sculptures, transported from inside the tower out through the center of the Glockenspiel by a Galil DMC-4143, appear four times a day. At sunrise, a rooster emerges and greets the day with crowing. To alert that noon has arrived, a horn appears along with a high pitch whistle. At sunset, a cannon with smoke and cannon fire reveals itself with a thunderous welcome (the university's mascot is a Pirate). And finally, at midnight, a jester's head appears accompanied by circus music layered with sound bites designed by Janney.

"Galil Controllers are extremely reliable and backed by superior support" -Carl Twarog

Carl Twarog, a professor in the School of Art and Design, serves as the Plaza's curator and describes the plaza as "a lab for students". Being curator is a huge responsibility. Carl and his team must care for and manage all of the plaza's mechanics which includes sensors, lights, water jets, computers, electronics, and other machinery, as well as a collection of over 500 videos, banks of 1-4 second segments of notes and tones, and sculptures."

Carl uses a Galil DMC-4143 connected to an Apple MAC to move the sculptures from their place inside the clock tower out through the door in the center of the Glockenspiel. The MAC runs a JavaScript based program that calculates sunrise and sunset, and sends a pulse to the controller for those shows. Noon and midnight signals are sent based on actual clock time for the other two shows. Each sculpture must travel different distances out the door and appear exactly at the apex of its show. To accomplish this movement, two of the DMC-4143's axes are used to move the Sculpture. One axis commands the trolley motor, a Bodine DC motor powered by a Minarik amplifier, which orients the appropriate sculpture perpendicular to the face of the Glockenspiel. The second axis commands another Bodine/Minarik combination to move the sculpture out the door to hit the apex of the show. The two remaining axes of the DMC-4143 are saved for backup if needed. The MAC also makes sure the correct music files are launched for the shows.

Carl and his engineering team inherited a DMC-2020 with a serial connection to a MAC from the original design. "We upgraded to the DMC-4143 because of its smaller size and built in Ethernet. The Ethernet connectivity gave us the flexibility to have more distance between the MAC and the controller because we connect the devices remotely", said Carl. "We wanted to continue using Galil controllers because of the demonstrated success, proven reliability and dependability of Galil products. Another huge factor was the outstanding technical support. I knew if we had a problem with the controller I could call technical support and the problem would get resolved quickly."

The Sonic Plaza is one of sixty two public artworks in the North Carolina Artworks in State Buildings Collection, and is considered the most ambitious and interactive project of the program. It is a combination of art, architecture, technology, and student participation that creates a lively, interesting public space and a sense of place.



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