

BY CALEB DANILOFF

PHOTOGRAPHS BY  
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# BU's Musical

*At the heart of  
the John R. Silber  
Symphonic Organ is an  
early 1900s computer*

# Jewels

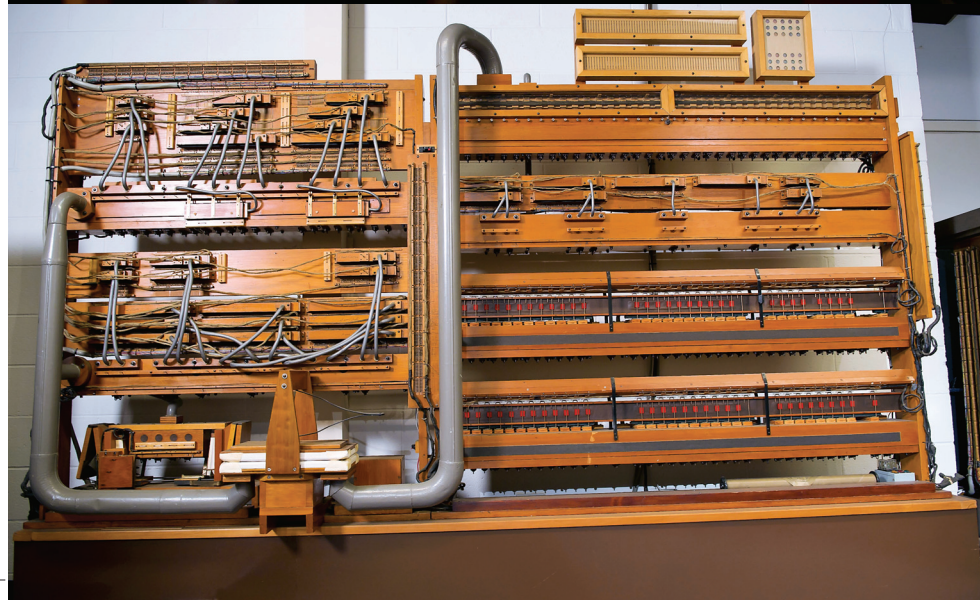
THERE AREN'T TOO many musical instruments large enough to walk through.

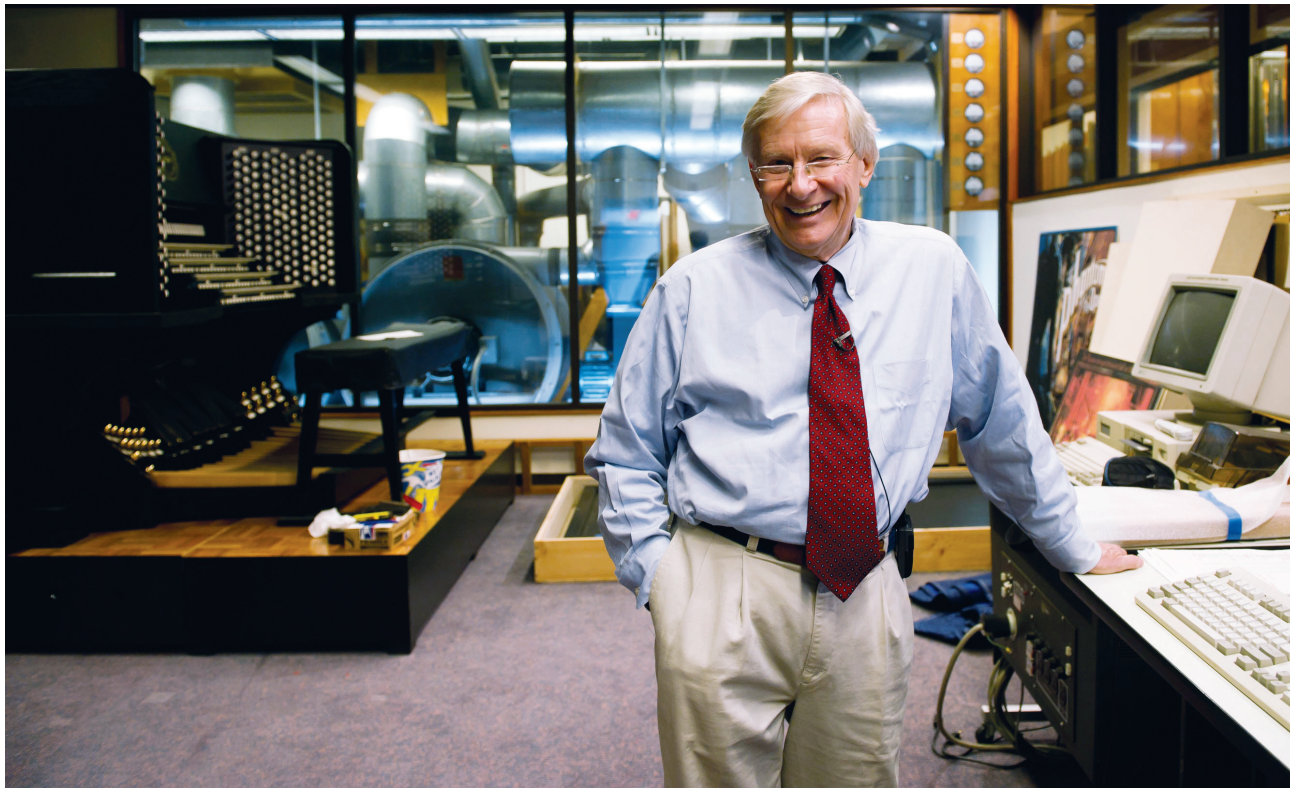
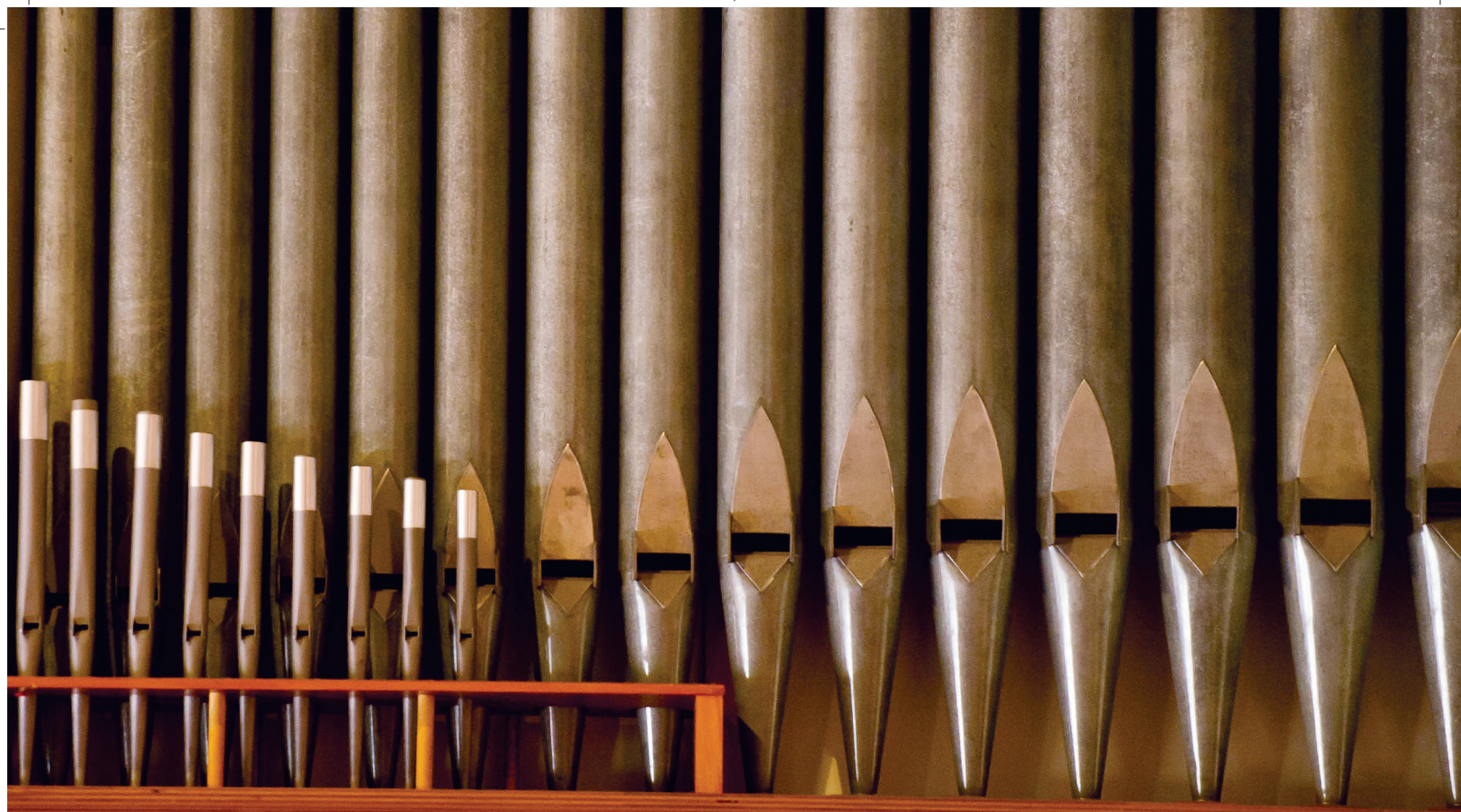
But make your way to the Metcalf Ballroom, on the second floor of the George Sherman Union, take the interior stairs, hang a left, jog up a couple of more steps, and you'll be strolling through a veritable symphonic park, a small forest of silver pipes. Even silent, the John R. Silber Symphonic Organ is a stunning sight.

The instrument is 30 feet high and 100 feet wide, has 7,500 pipes, and weighs 22.5 tons. It consists of five lower glassed-in chambers set along a parquet promenade and three upper ones with unenclosed ranks, or sets of pipes—skylines of wood and steel high above the carpeted ballroom. Across from the glass chambers is an operations room, home to several consoles, each with enough keys, levers, and pedals to give an octopus trouble. An adjacent room contains a compact blowing plant packed with six enormous vintage turbines kicking out 33 horsepower of pneumatic force.

## RESTORATION

Nelson Barden sprays a paper towel with glass cleaner and wipes down the ivory keys of a Skinner console. In the organ world, Barden is famous for his restoration work on organs at the Groton School in Groton, Mass., at Boston's Church of the Advent and Old South Church, and





**RESTORER OF ORGANS** Nelson Barden worked for 12 years in a specially designed studio at 808 Comm Ave. His team combined two magnificent organs into one that would fill the George Sherman Union ballroom with the sounds of cymbals, cellos, harps, flutes, and more.

his just-finished eight-year rehabilitation of the largest residence organ in the world, at Longwood Gardens near Philadelphia. But it was his extensive restoration, and fusion, of two residence organs donated to Boston University that put his name on the lips of enthusiasts around the globe.

For 12 years during the 1980s and early '90s, Nelson Barden & Associates were BU's restorers-in-residence, working in a specially designed studio in the Fuller Building at 808 Comm Ave. Spread before his team were bits and chunks of two player organs (instruments that play automatically without organ-

ists). The first was a water-damaged 12-rank 1930 Skinner, Opus 764, originally installed in the home of Percy Rockefeller in Greenwich, Conn., donated by John Robinson, then secretary of the University's Board of Trustees, in 1981. Not long after, Board chair Arthur G. B. Metcalf (SED'35, Hon.'74) donated a 23-rank 1930 Aeolian, Opus 1783, organ from his Winchester home, which had been built for a previous owner, Boston candymaker William Schrafft.

"Wealthy people had pipe organs in their homes as a status symbol and for musical entertainment," Barden says. "They were incredibly costly items. And most of the people who bought them were not organists and so they had to be operated by paper rolls."

Symphony enthusiast Metcalf had a vision: restore both instruments and combine them into a larger musical entity that could regularly fill the GSU ballroom (which was later named after him) with the sounds of cymbals, cellos, violins, harps, chimes, xylophones, flutes, tubas—the list goes on.

#### A COMPUTER BEFORE COMPUTERS

One element—a giant wooden panel of wires, ducts, jacks, leather, and lights—accompanying the donated water-stained Skinner organ puzzled Barden. It came with a patent, dated July 25, 1916, but it showed only the wiring layout, not how it operated. Worse, many of the wires had been chewed by rats. "That's the player relay," an old Skinner worker told Barden. "It was a secret project." After months of contemplation and tinkering and trial and error, Barden got the thing to cough up some sound. From there, he was able to connect the actions of the machine to the pipes of the organ. The player relay allowed the instrument to produce more notes than a traditional punched paper roll. Barden realized that for the past year he'd had his fingers in the guts of a binary computer patented eight years before IBM was formed and decades before keyboards and monitors were even concepts.

"The instrument is important because of what it was originally, which was a computer—a

minimalist computer that was operated by 12 volts DC, just like a car today, and air pressure," Barden says. "And the combination of those two things produced a mechanism that actually could do rudimentary computer functions. The memory storage was punched paper rolls. As the roll unfurled, the mechanism took that information and translated it into the impulses that drove the pipe organ."

During the project, additions from other vintage Skinner and Aeolian organs swelled the instrument from 35 to 62 ranks. Thousands of visitors descended on Barden's Comm Ave studio to study and gawk at the restored instrument. Barden and his staff gave hundreds of demos, and during the 1990 American Guild of Organists National Convention, held in Boston, the organ's late-night performances were a conference highlight. Barden and the BU organ ended up the subject of an episode of the PBS series *Restoration Stories*.

In 1993, the restored and fused symphonic organ, now operated by a modern-day computer that had translated the musical information on the paper rolls into digital form, was relocated to the Metcalf Ballroom and dedicated in honor of John Silber (Hon.'95), BU's seventh president. A third black console was added and was intended to live in a display room

at the top of the stairs, where it could easily be wheeled out for public performances.

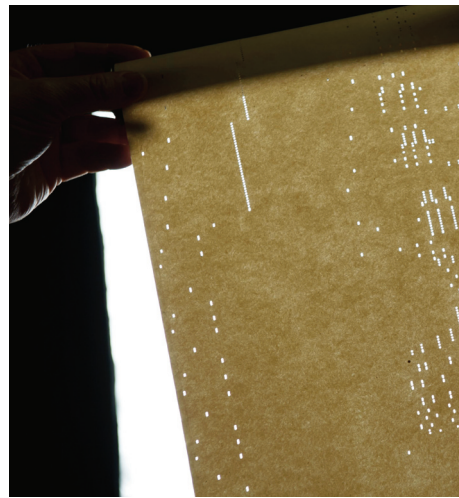
The room was never built.

Metcalf had envisioned the organ playing every day at lunchtime, among other things, but after he retired in 1994, funding fell off and interest in the unusual instrument dropped.

Except among the few.

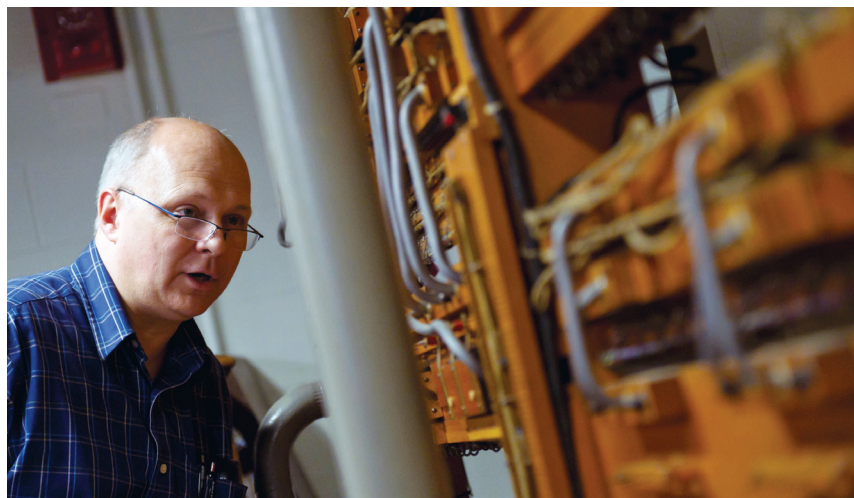
Robert Kotiuga, a College of Engineering associate professor, brings the students taking his Electric Guitar as Gateway to Electro Acoustics course on a field trip to the ballroom's second floor. "It's a marvelous snapshot in the development of modern technology," he says, "and

**WEB EXTRA**  
Watch a video about BU's 7,500-pipe symphonic organ at [bu.edu/bostonia](http://bu.edu/bostonia).



#### STORED MEMORY

Punched paper rolls (bottom left) were the original brains of the great music machine. One of three consoles on the 22.5-ton instrument (top). Robert Kotiuga, an ENG associate professor of engineering, leads his classes on tours of the organ.



a fantastic primary source for understanding the social implications of evolving technology.”

#### **TRIUMPHANT SOUNDS**

Although Barden wrapped up the project years ago, the organ restorer is clearly still attached to his gargantuan beauty. He buffs the ivory stops on the console until they shine,

then heads into the blower room. When he throws the switch, it sounds like jet engines and the room feels like it might lift off. Barden steps over to the computer, fires up the monitor, punches in some DOS commands, hits enter, and George Cobb’s “Russian Rag” starts pouring through the building. The massive

wooden shutters in the upper wall open and close, unleashing waves of music into the air. Behind the glass chamber doors, myriad pipes open and close while felted hammers strike strings. The huge carpeted room is enveloped as if in a dust storm.

“There are very few 1920s symphonic residence organs that are

still left in playable condition,” Barden says. “As far as I know, only four are completely restored with this particular mechanism to drive them. Possible future uses should certainly entail bringing classes to see this thing in operation. Right here in BU you’ve got a working 1916 computer. This really should be in the history of things here.” ■