Model will allow Iowa State's iconic campanile and carillon to travel beyond campus

CATEGORIES: NEWS, NOTABLE

The Department of Music and Theatre will host a "Bells of Iowa State" Gala Anniversary Concert on Oct. 27 to celebrate the 120th anniversary of the Stanton Memorial Carillon; the 25th anniversary of the University Carillonneur, Tin-Shi Tam; the 50th Anniversary of the Stephens Auditorium and The Ames International Orchestra Festival Association (AIOFA), and the 65th Anniversary of the Stanton Memorial Carillon Foundation. This special evening will unveil the new campanile-carillon Model, designed by cross-cutting ISU senior classes, and will feature the Stanton Carillon, Iowa State Choir Alumni, ISU Symphony Orchestra, and ISU Wind Ensemble.

To learn more about the story behind the new campanile-carillon model, read below.

Nothing tugs at the heartstrings of Iowa Staters quite like the iconic brick campanile and its melodic 50-bell carillon. Whether you're an alum or friend of the university, a current student, a faculty or staff member, you know the peace and tranquility that washes over you while walking across campus on a crisp autumn day, listening to the harmonious tones of the carillon's bells.

Labor of love

We can thank Edgar Stanton for bringing this great joy and physical landmark to Iowa State University. Stanton graduated from Iowa State's first class in 1872. He spent 50 years on campus as a student, faculty member, head of the mathematics department, secretary to the board of trustees, dean of the junior college and – on four separate occasions – acting president.

Edgar's wife, Margaret MacDonald Stanton, was the university's first dean of women. After Margaret passed away in 1895, Edgar envisioned a lasting memorial in her honor – a bell tower. Appropriate funding and approvals were secured, and construction of the campanile commenced in 1897; it was completed in 1898. The carillon began with 10 bells in 1899 followed by another 26 bells in 1929. Thirteen bells were added in 1956, and one final bell was placed in the carillon in 1967, bringing the total to 50 bells.

A 'model' idea

Something as special and significant as Iowa State's campanile and carillon should be shared beyond campus, at least that's what Tin-Shi Tam thought. In the spring of 2015, the Cownie Professor of Music and Iowa State's university carillonneur came up with the idea of creating a working, mobile model of the campanile and carillon. Her goal was to share the beloved landmark and the heritage with others across the state and throughout the nation.

"This model will be used at various university events and outreach programs, such as graduations, alumni events, state fairs and county fairs," Tam said. "It will also serve as an educational tool and a musical instrument, playing with orchestras."

To get the model project started, Tam worked with faculty members in various departments in engineering, design and music to initiate the multidisciplinary, student-led effort. She provided students with a set of broad requirements – replicate the look of the original campanile; create a playable carillon; design a sturdy structure that fits through a double door and is easy to assemble and take down; and incorporate great acoustics. Tam also requested visible mechanisms so onlookers could see the clappers strike the bells as the instrument is played.

"This project not only provides educational experiences for our students, it is truly a collaborative project to showcase our Cyclone spirit," Tam said.

The design gets underway

In the fall of 2015, a team of faculty members was established to oversee the project. In addition to Tam, team members were James Alleman, Cerwick Faculty Professor in civil, construction and environmental engineering; Jacqulyn Baughman, associate teaching professor in mechanical engineering; James Heise, associate teaching professor and capstone design projects coordinator in mechanical engineering; Michael Muecke, associate professor of architecture; David Ringholz, associate professor of industrial design; and Yelda Turkan, former assistant professor of civil, construction and environmental engineering.

Student teams began working on the model's various design elements in the spring of 2016. Senior design students in the mechanical engineering capstone class developed the systems and structure needed to construct a 1:5 scale model of the campanile and a 27-bell carillon that was architecturally accurate, safe and mobile.

In the fall of 2016, mechanical engineering and design students modified the original design from a tower-lifting system to a scissor-lift mechanism, allowing the model to rise and lower more easily. The engineering students also determined the materials to use for the tower façades that would be easy to set up and safe to take down, and yet look exactly like the Iowa State Campanile. Other students continued to make additional modifications to the model's design throughout the spring

and fall semesters of 2017, continually improving its safety, functionality and mobility.

In the spring of 2018, students in senior electrical, computer and software engineering design classes began to develop a digital carillon tutorial. This tutorial will provide visitors with hands-on experience playing carillon music by following falling notes on a screen and lights above the keys.

The constructions of the model started in April 2018. The first bell for the 27-bell carillon model was cast on campus in Black Engineering's metalcasting lab. Representatives from the Ohio-based Meeks, Watson and Co. bell foundry worked with lab technicians to cast the bell. Guests in the Memorial Union's Campanile Room watched a livestream of the casting. The finished bell was about 36 pounds, 10 inches in diameter and 8 inches tall. The remaining bells were cast and tuned in Ohio and delivered to campus in October 2019. The largest bell weighs 139.5 pounds and is 14 inches tall; the smallest bell is 15.5 pounds and measures 5 inches tall.

The campanile-carillon model's final height is just over 20 feet and it weighs approximately 3,000 pounds. The model will be transported on a box truck, and a pallet jack will help maneuver it into place. The student carillonneur leadership council will manage and operate the model at events.

"This project is an excellent opportunity for today's mechanical engineering students to contribute to the legacy of Edgar and Margaret MacDonald Stanton, and the campanile," Heise said. "Edgar was a mechanical engineer by degree and dedicated his life and career to that art and the university that he loved. Today our engineering students continue that dedication to the profession they enjoy by creating an instrument that can share the heritage of the 'Bells of Iowa State' with everyone."

Fundraising efforts ongoing

Fundraising efforts kicked off in the spring of 2016 to cover the model's $190,000 price tag, and to acquire additional funds for the Campanile-Carillon Model Endowment Fund. Donations are still being accepted through the Iowa State University Foundation. To donate to the campanile-carillon model project, visit the foundation's website at www.foundation.iastate.edu , email questions@foundation.iastate.edu or call 515-294-4607.

Four years after conjuring the idea of a model campanile and carillon, this adventure comes to fruition Oct. 27 with the model's long-awaited unveiling.

"It's been a time-consuming project, but I am so grateful to the Iowa State students and faculty for their dedication and labor of love in creating a campanile and carillon model that could be shared beyond our beautiful campus," Tam said. "I can't wait to get started."

Information for this article was compiled from Iowa State's College of Engineering, Department of Music and Theatre, Office of Admissions and Inside Iowa State.

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