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RESEARCH THAT MATTERS

CORNELL UNIVERSITY
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SawTeen See '77, MEng '78
THE PATH TO SUCCESS

From the time **SawTeen See** was a child growing up in Penang, an island state of Malaysia, she knew that she wanted to build beautiful buildings. In 2008, her project received the Best Tall Building in the World Award from the Council on Tall Buildings and Urban Habitat (CTBUH); See was partner-in-charge of the Shanghai World Financial Center—at 1,614 feet (492 meters), the tallest building in the People's Republic of China. During the years between, she created structural designs for dozens of iconic buildings in the United States and abroad, rose to majority ownership of a world-renowned structural engineering firm (Leslie E. Robertson Associates, R.L.L.P.), received the highest honor of her professional society (Distinguished Member of the American Society of Civil Engineers), and was named a fellow of the New York Academy of Sciences for her "outstanding contributions to the advancement of science."

> "Women represent only 10 percent of the engineers, at least in my field, yet the country has a great shortage of talented engineers."

The path to all of these successes, and the joy that's gone with them, began when See received a cable sent by the International Students and Scholars Office announcing that she had been awarded a full scholarship to study at Cornell.

"That scholarship changed my life," she says. "I knew that going to college was the only way to get out of a country where there was growing discrimination against minority Chinese, but my family could never have afforded to send me abroad."

Her two older siblings had found their way to schools in Australia. See applied to three in the United States; only Cornell offered a full scholarship.

She arrived on campus with enough advanced placement credits in math and science from her high school in Penang (a technical institute in which only 1 percent were girls) to complete a bachelor's degree in three years (including summers) and then a master's in a fourth. With a final year left on her student visa, See applied for a position as an engineer with Leslie E. Robertson Associates, R.L.L.P. (LERA) at the suggestion of one of her professors, the late Peter Gergely. See was appreciated from the start, and the firm sponsored her application for permanent residency, which was granted in 1980. She became a U.S citizen in 1985.

Gergely knew that See was not only talented in the technical aspects of building design, but the aesthetic side as well. And for that reason he suggested LERA; it was the right match.

"What appealed to me about the firm was that the building designs they were doing were not run-of-the-mill factories and shopping malls but architectural buildings, those of more aesthetic interest and with very well known architects," See recalls.

Creating architectural buildings requires a very different way of working, with a strong focus on the details of the structural members because, when they are exposed, the structure is also the architecture, See explains.

"Structural engineers can have profound impact on how a building looks, the shape of it," she says. "People think that the architect is the master for buildings, but it is becoming more of a collaboration between the architect, the structural engineer, and the building services engineer." And this collaboration is part of the job that she particularly enjoys. The results are landmark buildings that frequently appear on the covers of architectural and engineering magazines.

"I've been fortunate to work with so many great architects," See says. "So it's difficult to single out any person or firm."

Although LERA is associated with tall buildings—See's husband, Leslie E. Robertson, a founding partner, was the structural engineer for the World Trade Center in New York City—she's been involved in projects as diverse as the 37-story J. W. Marriott Tower located in Almaty, Kazakhstan, a high seismic zone, to the six-story new Ambulatory Care Facility for Bellevue Hospital Center in New York City to the $160-million expansion of the Baltimore Convention Center in Baltimore, Maryland, with a 180-x-600-foot column-free space in the exhibition hall.

Among See's current projects is the NASCAR Hall of Fame and Museum in Charlotte, North Carolina, which will open next year. Other museums include the Rock 'n' Roll Hall of Fame and Museum in Cleveland, Ohio, featuring a 50,000-square-foot exhibition space beneath a soaring "glass tent" that engages an offshore eight-story tower containing the Hall of Fame, and the Miho Museum and Bridge in Shigaraki, Japan.

In addition to providing structural engineering design services, See spends some of her time conducting peer reviews. One project on which she had a positive impact was the International Finance Center (IFC) 1&2, at Hong Kong Station, by providing value engineering, peer reviews, and alternative designs for the owner. The 88-story, 1,378-foot IFC 2 tower is the tallest building in Hong Kong.

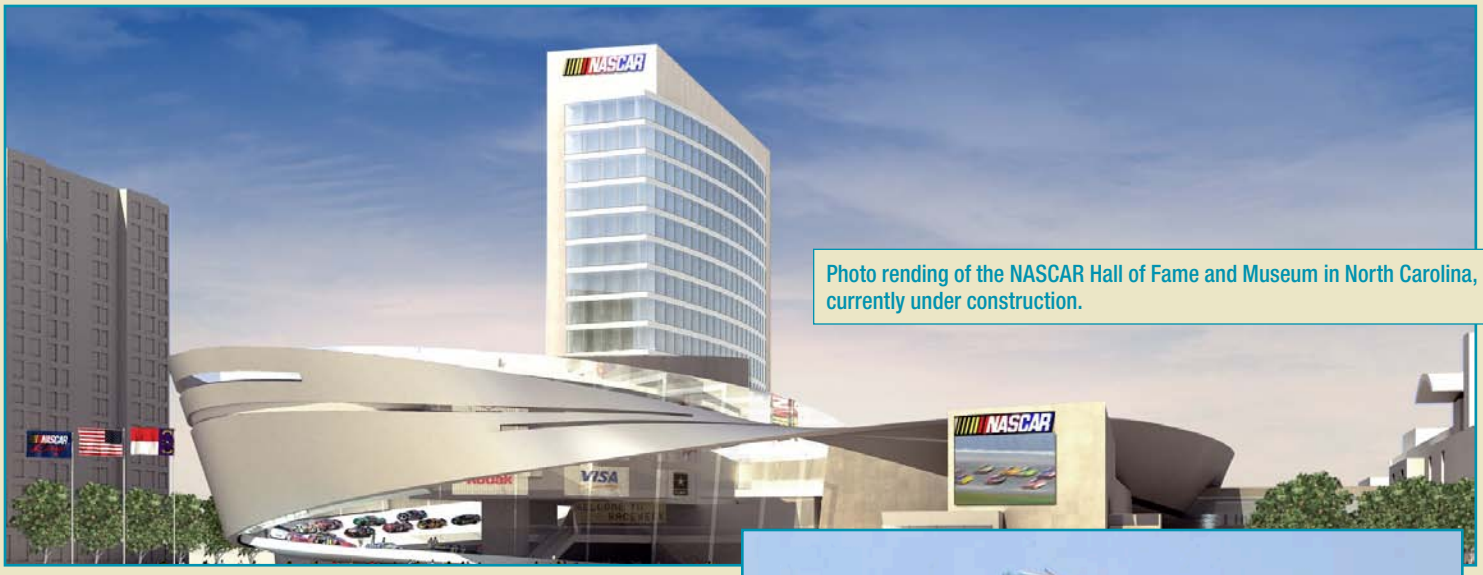

Photo rending of the NASCAR Hall of Fame and Museum in North Carolina, currently under construction.

Because half of LERA's projects are international (as are many of the engineers in the 80-member firm), See spends some of her time on the road, primarily in meetings and reviewing the progress of projects currently under way but occasionally to appreciate those that have been completed. In contrast to other professions, law or banking for example, See takes pleasure in using her mind to design things that last.

"It's very gratifying to be able to touch and experience something you have created," says See, who became partner in 1986 and a 51-percent owner in 1989, resulting in the designation of LERA as a MBE/WBE (minority business enterprise/woman business enterprise). Today, as managing partner, she must fit in the responsibility for the general management of the practice around the demands of her design projects.

And then there is pride in her 24-year-old daughter, Karla Mei Robertson, who graduated from Stanford with a degree in mechanical engineering with a focus on product design. A current project with which Karla Mei has been involved is Palm's newest smartphone, the soon-to-be-available Pre.

"It was announced at the Consumer Electronics Show in Las Vegas in January that it won 'the best of show'," See says. "She's very proud of it."

See's encouragement of young women to become engineers extends well beyond her family. In 2006 she was profiled in a book published by the American Society of Civil Engineers titled *Changing Our World—Stories of Women Engineers.*

"Women represent only 10 percent of the engineers, at least in my field, yet the country has a great shortage of talented engineers," says See. "At home and in the schools, girls are still pushed one way while boys are pushed another," she notes. "So the book is aimed at girls in school, to encourage them to take math and science."

Financial need is often another barrier to young women interested in the field. For that reason, and in recognition of See's own beginnings as a scholarship recipient, she and her husband created the Leslie E. Robertson and SawTeen See Master's of Engineering Student Award Fund in November 2002. Her only stipulation is that the first priority be given to a female engineer. See continues her involvement with Cornell as a member of the Advisory Council of the School of Civil and Environmental Engineering.

"The education I got at Cornell changed my life," See says. "It was the best thing that ever happened to me, particularly with the benefit of the full scholarship."

Shanghai World Financial Center, 1,614 feet tall, in People's Republic of China.

Metta Winter