Special Achievement Award

Stanley D. Lindsey

The 30-story IJL-Financial Center in Charlotte was designed with LRFD and utilizes concrete columns and steel girders.

IN 1960, BEFORE HIS JUNIOR YEAR AS A CIVIL ENGINEER MAJOR at the University of Tennessee, Stanley D. Lindsey was barely passing his classes. One day, Lindsey's dean pulled him into his office and warned him that he was in danger of failing.

Realizing he couldn't have an engineering career without an engineering degree, Lindsey started to pay attention.

"I hadn't taken any structural engineering courses. But when I walked into the first class, I understood almost exactly what they were saying."

And he made the Dean's list.

By Dawn Bailey

LINDSEY'S INITIAL SUCCESS FOLLOWED HIM INTO GRADUATE SCHOOL, where, as a Ph.D. student at Vanderbilt University in the 1970s, he wrote a dissertation entitled "Man-Machine Interaction in Structural Engineering." The paper was a further sign that his growing love for education connected with an appreciation for computer technology.

"When I wrote it, it was not customary to design programs in an interactive mode with computers," he recalled. "I envisioned structural engineering on a real-time basis where man and machine interacted together."

"It's unusual for a person like him to be in the industry," said Arvind Goverdhan, a principal for of Stanley D. Lindsey and Associates Ltd. (SDLAL). "He has an academic tinge. He pushes technology, and you don't find many people with that vision in our industry."

That vision has served Lindsey well as president

The roof of the Opryland Hotel addition in Nashville covers more than 179,000 sq. ft.

SDLAL. Thirty-two years later, the company can boast of a design portfolio exceeding a billion dollars.

Lindsey's entrance into the field wasn't that auspicious, however. In 1962, anxious to test his ideas but still not established, he took a job that offered the lowest salary of his graduating class. He worked as a steel fabricator for Volunteer Structures in Nashville under S.V. "Ted" Allen.

"The boss took me under his wing, and after six months, I was the only engineer there. He taught me the fundamentals of business. We had rapport," Lindsey said – so much that so that Lindsey even named his son Allen.

After Allen's tutelage, Lindsey went on to start his own firm. Founded in Tennessee in 1967 with one employee (Lindsey), the company at one point employed 51 structural design engineers and 11 principals.

SDLAL has built virtually every type of structure including commercial, parking, governmental, sports/recreation, residential/resort housing, educational, healthcare, and industrial and specialty buildings.

"It's purposeful. You have a bigger market. If government's down, then commercial's up, and if commercial's down, then the government's up," Lindsey said.

The firm also has over 30 years experience in the evaluation and retrofit of hundreds of structures and is registered in 49 states. SDLAL engineers also regularly consult with architectural firms throughout the United States.

Yet Lindsey is not complacent in only reaping the benefits of his success. He is always looking to learn ways that structural engineering can be both practical and creative.

Since 1969, he has presented at more than 50 conferences on works ranging from the effect of connection flexibility on steel members and frame stability to how to reduce the cost of steel construction. The former resulted in the widespread use of partially restrained connections in the industry today.

Under Lindsey's leadership, SDLAL is now a full-service consulting structural engineering firm with offices throughout the South and Southeast, including service offices in Tampa, Orlando, Memphis, Louisville, Lexington, KY, and Jackson, MS.

LINDSEY PRIDES HIMSELF ON THE SUCCESS OF HIS BUSINESS and on the high academic standards he sets for employees, looking only at applicants with a minimum of a Master's degree in Structural Engineering.

"If they don't know the theory,

they won't know how a building behaves, and then they can't design it. If they don't know the background of a formula, then they won't know its limits," he said.

He cites the buildings his firm worked on for the 1982 World's Fair in Knoxville as an example of the interplay between practice and theory.

"The World's Fair is the only frame-occupied elevated sphere, and it is very unique in that sense," Lindsey said. "There's not many buildings with that shape. It required a three-dimensional analysis with curved members."

In accordance with his emphasis on education and technology, Lindsey urges his employees to serve on national structural engineering boards SAC, NEHRP, and AISC. Currently, several members of his firm serve on a committee that is developing structural design codes and standards for the industry, and are using computers to develop the equations that will underline them.

Lindsey believes computers can help engineers spot the flaws in their ideas because they offer the opportunity to "see alternatives, like different framing systems and members." He also said they allow room to play with the dimensions of a building before any definitive structural plans are set.

"His engineers are allowed to use their talents to provide customers with the most effective building engineering can provide," said AISC member Frank Wylie of Wylie Steel Fabricators in Nashville.

A case in point is the Aquatics venue for the 1996 Olympics in Atlanta.

Lindsey said computers were crucial to being able to design the structure because they allowed his engineers to do analyses, which, if done by hand, "would've been far too complicated."

"The shape of the roof was architecturally designated to be in a wave form. It required a complete full-dimensional model of the roof structure," Lindsey remarked. "We couldn't have done an analysis of the structure without [computers]."

Lindsey worked closely with the architects of the venue to help determine how they envisioned it and the messages they were trying to get across. His firm then worked on creating structures that helped develop that vision, utilizing the computer's ability to allow quick adaptations.

Despite this flagship project, it is Lindsey's emphasis on continuing education that many believe is his key to success. One reason he is so confident in his employees is because of the high education level they have achieved. He said he has never met someone with a post-bachelor's degree that wasn't self-motivated to learn and improve.

This desire to constantly refine and hone their skills has led to SDLAL employees being regularly invited to present the results of their research on structural analysis, design, and construction techniques to engineers throughout the world.

"It helps us stay on top of the game," Lindsey noted. "The better knowledge base you have, the better job you can do."

It also helps build a better building.

Following his own advice, Lindsey has become a prolific writer of papers, such as the "Composite Construction Design for Buildings" and the "Eccentric Brace Frames: Suggested Design Procedures for Wind and Low Seismic Forces."

He has also been a featured guest at conferences and a contributing author for publications dealing with various aspects of structural engineering such as the Engineering Journal and ASCE's Civil Engineering magazine.

Lindsey noted the best way to learn more about structural engineering is to write a paper about some new aspect of it.

Stanley D. Lindsey

Currently, he is exploring steel designs of the future and how engineers can take advantage of the computer's analytical technology.

One of Lindsey's papers led to an increase in the use PR connections in their work. For his work in making PR connections understandable and useable by the design profession, AISC awarded Lindsey a Special Achievement Award in 1999.

"I think it's an engineer's duty to his fellow engineers to keep them informed," he said.

Lindsey continues to be a proponent for the latest in structural design technology, and advises engineers to value computers as he sees them as the future of structural engineering.

Computers are "tools that can be used in such a way as to allow for faster education of engineers and faster analyses of structures," Lindsey said. "Any two analysis you can do by hand, you can do 50 by computer."

As a testament to his beliefs, SDLAL develops all of its own software and recently began instituting a program that analyzes the T-R connections of buildings.

"My job is not to lead and hold back. I try to hire everybody who is smarter than I am, and let them loose," he said.

Dawn Bailey is a freelance writer based in Evanston, Illinois.