June 2018

THE NAUTILUS

The Nautilus - the name for our newsletter, is the focal design element in The Clark Enersen Partners' logo. It represents a mathematical ratio that can be found in nature, as seen in the shell's structure. This ratio is closely related to the Fibonacci Sequence and is known as the Golden Ratio, which describes an intuitive, natural balance between two proportions. The external circular shape of the nautilus shell represents wholeness, but its continuous motion—an infinite spiral—empowers and inspires future growth and change. Internally, the cross-section depicts how all pieces seamlessly fit together in meaningful partnership. Collectively, as one, that's The Clark Enersen Partners. In everything we do, we strive to empower and inspire through partnership in thoughtful design.

June 2018

VETERINARY DIAGNOSTIC LABORATORIES

written by
ANDY STEPP AIA
Architect, Senior Principal

ERADICATING ANIMIAL DISEASE - THE FIRST LINE OF DEFENSE

On March 27, 2015, a disease outbreak of highly pathogenic avian influenza (H5N2) was identified at a large turkey farm in southwest Minnesota. Over the course of the following two months, the fast-moving disease spread to turkey, chicken, and egg production facilities in Iowa, northeast Nebraska, and western South Dakota. By early June, the disease had been contained and largely eradicated in the region. The final report on the outbreak from the USDA stated that in just two short months, over 50 million agricultural birds were killed by the disease including more than 12% of all egg-laying hens and 8% of all turkeys in the US inventory. The results of the outbreak would have been more widespread without the vigilance and dedication of state supported laboratories that were established in the early 20th century to counteract this exact type of threat. During the outbreak, these laboratories provided continuous monitoring and diagnostic testing to map the spread of the disease and direct resources from the US Department of Agriculture. Through their hard work, the outbreak was confined to a handful of states and stamped out before it could spread to other regions. Without a professional and quick response from this network of individual state labs and the coordination of the U.S. Department of Agriculture, the disease probably would have spread throughout the country and fully decimated an entire sector of the agricultural economy, potentially taking years to recover.

Anyone who has selected an item from the meat counter at the local grocery, bought a gallon of milk, or taken a family pet to the veterinarian has benefitted from the quiet, but vital network of veterinary diagnostic laboratories (VDLs) located throughout the country. Most states in the U.S. have at least one publicly supported VDL facility that is dedicated to safeguarding and monitoring the health of our companion animals, wildlife species, and our nation's food supply. These laboratories and the dedicated scientists that work in them, are the first line of defense against disease outbreaks that are an ever-present risk.

One of the laboratories that found itself at ground zero during the 2015 outbreak was the veterinary diagnostic laboratory for the State of South Dakota, known as the South Dakota Animal Disease Research and Diagnostic Laboratory (ADRDL). It is located on the campus of South Dakota State University in Brookings, 120 miles north of Sioux City and just 20 miles west of the Minnesota border. Along with peer institutions in Minnesota and Iowa, South Dakota's ADRDL was the tip of the spear in dealing with the outbreak and worked around the clock for several months until the threat had been alleviated. Throughout that critical period, they worked in a facility built in 1993. The existing building did not have a BSL-3 laboratory—a meticulously designed containment space with redundant systems that enable scientists and diagnosticians to work safely with specific pathogens posing an elevated threat to the agriculture industry and the public. In addition, the entire molecular diagnostics staff was working in space that had originally been designed for a different purpose. This is due to the fact that the field of molecular diagnostics, while commonplace today, is based on instrumentation and methodologies that were only in their infancy or not yet invented in 1993.

Less than a year after the H5N2 outbreak had been contained, The Clark Enersen Partners, in partnership with ED2 International and West Plains Engineering, was selected to help South Dakota with an essential expansion and modernization of their veterinary diagnostic laboratory. Lab Director Jane Hennings and Assistant Director Eric Nelson led an enthusiastic staff that process tens of thousands of biological samples each year, evaluating the health of the region's veterinary agriculture populations and searching for the first signs of disease. Our design team along with key stakeholders and staff developed a facility program, conceptual design, and project budget that were prepared for discussion and approval by the 2017 legislature. Expenditures for the new facility expansion were approved on the last day of the legislative session at which time the project moved immediately into the next phase of design.

The redesigned laboratory will be divided into multiple sections, each having a specific area of focus and expertise to include Molecular Diagnostics, Clinical Pathology, Serology, Bacteriology, Histopathology, Virology, and Food Safety. The new facility will also have several new features including a BSL-3 microbiology laboratory, a BSL-2 enhanced necropsy floor, and a genetic sequencing suite to accommodate emerging technologies that are poised to revolutionize diagnostic practice. The newly imagined South Dakota Animal Disease Research and Diagnostic Laboratory will be comprised of a new 81,000-square-foot addition. When completed, all diagnostic functions will vacate the existing building and take up residence in the new addition with significant upgrades in accommodation of existing and future instrumentation, upgraded finishes, containment spaces, and modern mechanical solutions that include redundancy in air flow, power, and life safety.

Ground was broken in March of this year when the South Dakota soil began to thaw. The new addition will rise out of the ground anticipating a summer 2019 completion. The directors and staff of the laboratory, as well as Les Olive and the facilities department at South Dakota State University, have been a joy to work with. Their dedication to veterinary diagnostic science and its critical mission is exceptional and that dedication carried over into the programming and design of their new home. As architects and engineers, we strongly value a client that is as driven and thorough as they were throughout the design process. It drives us to rise to their level. The lessons we all learned together will be used and expanded upon as we continue our upcoming work on veterinary diagnostics laboratories. We are extremely proud of our affiliation with the South Dakota ADRDL and look forward to the day when they will continue the work of their esteemed profession in their new leading-edge facility.

EMPLOYEE SPOTLIGHT

J BRIAN ROCK IIDA, LEED AP

Interior Designer, Associate Principal

Q: WHY DO YOU COME TO WORK EVERY DAY?

A: Rising each day and being a part of the flow of our work is really more of a spiritual thing for me than anything else. I see the gift of design as a deep-routed characteristic which drives me, regardless of challenges or obstacles.

Q: WHAT DO YOU DO FOR FUN? HOBBIES, PERSONAL INTERESTS?

A: I have an affinity for classic Porsche cars. My current car is a 1963 356B.

MYRIAH STANSBERRY

Special Projects Coordinator

Q: HOW HAVE YOU SEEN OUR FIRM MAKE A DIFFERENCE IN THE LIVES OF OTHERS?

A: Every day I get to walk into a beautiful elementary school, that we designed, to pick up my kiddo. I hear comments from teachers, administrators, and parents about how the new addition and renovations have positively impacted not only them, but especially the children. It is a great feeling to know that our firm has helped to make that happen.

Q: FAVORITE SPORTS TEAM?

A: Denver Broncos – Colorado Rockies