

COMMISSIONING

APPLYING HANDS-ON, PRACTICAL KNOWLEDGE

COMMISSIONING IS NOT AN EVENT, IT IS A PROCESS

GLHN Architects & Engineers, Inc. is a Full Member, Provider Firm in the Building Commissioning Association (BCA) with ability to provide the Essential Attributes of Commissioning and the Peer Review process as set forth by the Association. The GLHN commissioning team includes registered and LEED accredited engineers, a registered architect, two Certified Commissioning Authorities (one also a certified Level 2 Thermographer), and one certified Commissioning Technician. The team provides services for third party LEED commissioning, enhanced commissioning, retro-commissioning, re-commissioning, and Operations and Maintenance personnel training.

As commissioning authority (Cx), GLHN offers constructive input to the design team, provides support to the client, and facilitates dialog for mechanical, electrical, plumbing, and energy systems design and implementation. Commissioning activities also often include thermography to verify the correct construction of the building envelope and evaluate building heat loss. As an integrated, multidiscipline architecture and engineering firm, GLHN has years of relevant experience in designing building infrastructure. The GLHN team understands common systems failure modes, and has a great deal of expertise in designing HVAC systems for unique climates and microclimates. We have designed and commissioned many large scale air handling systems and central utility plants, and have a thorough understanding of the capabilities and challenges of Energy Management and Control Systems.

THIRD PARTY TECHNICAL REVIEWS

PEER REVIEW EXPERIENCE BENEFITS THE Cx PROCESS

GLHN regularly provides third party peer review services to the Department of Veterans Affairs and other governmental clients. GLHN performs a technical review of engineering assumptions, calculations, models, approach, and compliance to design and specification standards. The experience is directly transferable to systems commissioning design reviews. The ability to auger into aspects such as energy model assumptions, equipment selection methodology, and sequence of operation and control, combined with the firm's ability to properly frame and generate specific questions provides great value to a project. GLHN's capacity to communicate on a respectful peer-to-peer basis with the project architect and engineer is critical to successful commissioning.



NORTHERN ARIZONA UNIVERSITY FLAGSTAFF, ARIZONA

GLHN has been working at Northern Arizona University continuously since 1983. In 2004, NAU selected GLHN to provide as-needed LEED commissioning services. GLHN commissioned five new buildings under this contract: **Applied Research and Development** (left, 59,000 SF, certified LEED Platinum), **College of Business Administration** (110,000 SF, certified LEED Gold), **College of Engineering and Technology** (95,600 SF, LEED certified), **Chemistry Laboratory Building** (100,000 SF), and **High Country Conference Center** (44,000 SF). In addition, GLHN has commissioned the **North and South Campus Central Plants** and **Wettaw Biology / Biochemistry Building**.



UNIVERSITY OF ARIZONA TUCSON, ARIZONA

GLHN has been working continuously at the University of Arizona since 1966. The firm was contracted by the University of Arizona to provide third party LEED commissioning services for the **Student Recreation Center Expansion** (left, 42,500 SF, certified LEED Platinum), **Sixth Street Residence Halls** (350,000 SF, certified LEED Platinum), **Arizona Stadium North End Zone Expansion** (183,000 SF, \$72.3 million), and the Health Sciences Education Building at the Phoenix Biomedical Campus (265,000 SF, \$135 million). GLHN has also commissioned numerous **chilled water systems upgrades** over the years, the **Thermal Energy Storage** system at the Central Heating and Refrigeration Plant, and the **Gross Anatomy Laboratory**.



OTHER HIGHER EDUCATIONAL INSTITUTIONS

The \$50+ million **University of New Mexico Utilities Infrastructure Renewal** involved design of the new Lomas Chilled Water Plant (left), renovation of the existing Ford Utilities Center, and campus wide underground infrastructure; GLHN served as the Engineer of Record and Commissioning Agent. GLHN served as Architect and Engineer of Record and also commissioned the \$24 million **New Mexico State University Campus Chilled Water Improvements and Satellite Central Plant**. GLHN has also commissioned over 200,000 SF of laboratory facilities at the **Arizona State University Life Sciences E-Wing and Physical Sciences F-Wing** and **University of Illinois at Chicago East Campus Central Plant**.



GOVERNMENTAL AND PRIVATE ENTITIES

GLHN was Architect and Engineer of Record and Commissioning Agent for the \$10.4 million, 40,000 SF **City of Tucson Patrick K. Hardesty Midtown Multi-Service Center**, housing a police substation. Commissioning assignments completed for other governmental and private entities include the **State of Illinois Capitol Complex and Archives Building**, **Bureau of Land Management Red Rock Canyon Visitor Center** in Nevada, **SALT River Project Production Room** in Arizona, **Rincon Fire Station** in Tucson, and new **W.L. Gore Business Complex** in Phoenix.