

THERE'S NO PLACE LIKE

TD2
engineering
& surveying



JACK AND JILL GO UP THE HILL - La Vista Parade 2012

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HOME

Eleven years ago, TD2 opened a branch in Sioux Falls, South Dakota. This was a corporate decision to meet an employee and his family's needs and their desire to go home. It was a good decision. All these years later, the practice has integrated into the community and continues to meet the structural engineering needs of clients across the state.

LIFE HAPPENS

Josh Storm, a new graduate engineer from South Dakota State University, came to Omaha in 2001 to take a job in TD2's Structural Engineering department.

Professionally, Josh spent the required years as an engineering intern. Learning the profession firsthand from his mentors and peers at TD2, he has built an impressive resume of work on new and renovation projects of various types, especially historic buildings. He received his P.E. in Nebraska in 2006. And became registered in Iowa, North Dakota, Minnesota, and South Dakota.

Personally, over the years, as they do, things change. Josh married Jill, bought a house, and had a baby, Jack. And then Jill didn't feel well. She was diagnosed with a serious health condition requiring major surgery, life-long meds, and monitoring. The surgery was successful, but recovering and with a small child, they needed help. The daily support of family became more important than ever. However, they were hundreds of miles away.

Josh proposed starting a South Dakota office to kill the proverbial two birds with one stone. The Storms could move closer to family, and TD2 could be represented in South Dakota. The principals could see the importance of investing time and resources into a valued employee and being open to new opportunities. They went for it, and in September 2012, the second TD2 office opened for business.

The solid core of South Dakota clients has grown organically. Projects have come in all sizes, styles, and structural systems. Architects, contractors, and institutions have become repeat clients, and working with them has been our pleasure.

Inside this issue, we'll look at two projects: the recently completed Mount Marty Fieldhouse, which represents a hybrid of structural systems, and a current project in design, the Brookings Armory and Hotel, that combines a historic restoration with new construction.

The family has grown with the addition of another son, Nick. While Josh and Jill grew up in small-town South Dakota, they now have deep roots in Sioux Falls. Its small-city Midwestern charm fits their family perfectly.

They say you can't go home again because it won't be the same as you remembered. But when going home means emotional support, connected extended family, and quality time together, you can.



PROJECT SPOTLIGHT **YANKTON RECREATION HIED**

RUTH DONOHUE FIRST DAKOTA FIELDHOUSE, MOUNT MARTY UNIVERSITY

In 2018, Mount Marty was growing and wanted to invest in a multi-use sports and recreation facility. The building needed to be a showpiece, attract students and connect the community.

DETAILS

Scope: New construction

Size: 100,000 SF, includes 74,000 SF event space and 7,500 SF weight training and fitness facility

Owner: Mount Marty University

Architect: RDG Planning & Design

Completion: 2020

Services provided by TD2: Structural Engineering

COMBINING STRUCTURAL SYSTEMS

This new facility combines athletics, recreation, and training spaces, and the exterior features various metal panels, concrete, and glass materials. Structurally, the new fieldhouse is an excellent example of a hybrid of systems, typically driven by cost and functionality.

Major components include a 74,000 SF two-volume structure and a smaller wrap-around base. A glass corner entry puts it all on display.

STRUCTURAL HIGHLIGHTS

- Analyze and detail the joints between distinct building types to allow differential movement without damaging either side of the joint.
- Detail the tricky framing geometry featuring exterior walls that skew inward along a soffit while sloping upward at the top.
- Design cast-in-place concrete building walls used as feature walls exposed to view.
- Conceal rooftop equipment with large parapets. The original design's extra high parapets and rooftop screen walls were removed during a value-analysis review to save cost.
- Coordinate concrete floor slabs for various applications and finishes, including an exposed polished finish, recessed wood floor, running track surface, subgrade for artificial field turf, and field events such as long jump and pole vault.

Photography: Cipher Imaging.



MOUNT MARTY RESIDENCE HALL

Fast on the heels of completing the fieldhouse, the same project architect and general contractor began working on the Rickenbach Suites. TD2 provided the structural engineering for this 96-bed living-learning community for third- and fourth-year students that sits just southeast of the fieldhouse. (Top photo.)

PROJECT SPOTLIGHT **BROOKINGS** HISTORIC RESTORATION HOSPITALITY URBAN INFILL

BROOKINGS ARMORY AND HOTEL INDIGO

Big things are in store for this 1937 WPA cast-in-place concrete and wood structure used as a military training center from 1938 until 1976. The Armory recently had a community and recreation focus and was home to the Parks and Recreation offices. The new owners envision its rehabilitation into multi-use commercial, retail, residential, and community space.

DETAILS

Scope: Historic restoration and new construction
Approx. Size: Armory 22,000 SF, Hotel/Parking 90,000 SF
Owner: Linchpin Corporation
Architect: ID8 Architecture
Completion: est. 2024
Services provided by TD2: Structural Engineering

COMBINING OLD WITH NEW

TD2 Structural Engineering is completing the design of the historic restoration and pairing it with a new 73-room Hotel Indigo. Phase I entails a structural analysis, hazardous material remediation, permitting, historic preservation, and city building regulations. Phase II redevelops the Armory, and Phase III adds the hotel and parking garage.

STRUCTURAL HIGHLIGHTS

- Support the hotel with a two-story precast concrete podium for parking and a lobby.
- Design the three-story cold-formed steel framed hotel with concrete slab-on-deck to meet stringent hotel noise restrictions.
- Fit and link the new hotel to the historic Armory building and Masonic Lodge. Keep the structure lightweight to minimize foundation loads near the existing buildings and designing an elevator pit foundation to avoid undermining the existing building foundations.
- Add a new partial second-floor level within the existing Armory building, transfer loads through the first floor, and install new foundations at the basement level.
- Expose and highlight the Armory's unique historic wood and steel girder trusses by removing the ceiling joists bracing the bottom chords, and adding new chord bracing to support new ballroom chandeliers. (Top photo.)

Renderings: ID8 Architecture and Linchpin Corporation.



HOTEL INDIGOS

This is the second Hotel Indigo for TD2 Structural. For Hotel Indigo Omaha Downtown, the structural design for two new stair towers and an elevator tower placed into a narrow “U” shaped, 7-story, 1918 brick landmark rested on an innovative application of a structural foundation system using ductile iron pipe. Interested? You can read more here on the TD2 website <https://bit.ly/4003cye>.



2023 SUMMER OMAHA INTERNSHIPS

We are always on the lookout for excellent interns. Student interns don't need experience to apply for the internship positions listed below. Earn while you learn. Take that first step and email your interest and resume to TD2MAIL@TD2CO.com or fill out our online application at <https://www.td2co.com/careers/>.

Civil Engineering (Civil/Geotechnical/CMT/SI) Field Support Technician

Experience in the field offers firsthand exposure to the industry and the opportunity to get your hands dirty. Typically, TD2's Civil Department hires six to eight third-year engineering students as Field Tech Support on the drill rig, collecting soil samples and conducting testing in the lab. TD2 also conducts Construction Materials Testing and Special Inspections. Interns accompany inspectors to job sites as they provide quantifiable results on the durability, strength, and characteristics of the materials used during construction (masonry, soil, cast-in-place concrete, and asphalt) so they perform as expected and endure over time.

Land Survey

Land Survey is a perfect place to start if you love the outdoors and are good at math. Our Land Survey Department hires one or two interns for the summer months. The student has a full-time, immersion

experience holding instruments for the Surveyor on a 2- or 3-man crew, getting familiar with the equipment (Leica Total Station, Leica GPS), and learning the importance of site layout and elevations to setting grade.

Structural Engineering Office Support Technician

TD2's Structural Department hires one or two third-year engineering students to work as Structural Office Tech Support. TD2 provides a hands-on learning experience and the opportunity to develop, participate and learn critical roles and functions. In addition, the intern works alongside professionals who have a lifetime of experience to share. Tasks may entail:

- Working in AutoCAD and Revit
- Simple design calculations/loads for footings and retaining walls
- Shop drawings
- Interacting with clients on the phone and in-person
- Site visits – assessing current conditions, measuring beams and columns

Basic Requirements:

- Willingness
- Curiosity
- Driver's License

Thompson, Dreessen & Dörner, Inc.

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