



**TAYLOR RYMAR**  
CORPORATION



## Welcome to Taylor RyMar Corporation

Taylor RyMar Corporation is a consulting engineering firm where visions are actualized through our expertise in design, engineering, planning, and analysis.

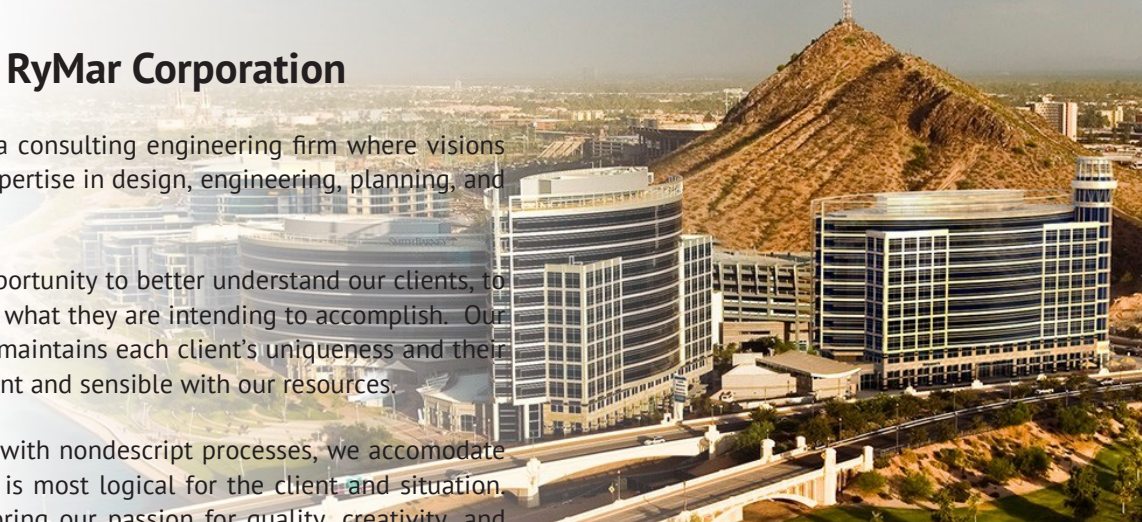
We see each project as an opportunity to better understand our clients, to learn about who they are and what they are intending to accomplish. Our role is to craft solutions that maintains each client's uniqueness and their needs, as well as being efficient and sensible with our resources.

Instead of approaching tasks with nondescript processes, we accommodate our course of action to what is most logical for the client and situation. However, do know that we bring our passion for quality, creativity, and relationships *Every. Single. Time.*

At Taylor RyMar, we view engineering as both an art and science. We pride ourselves on our focus on detail, immersing ourselves into the technical aspects of each job. Our work has involved a wide range of industries, requiring extensive research and understanding of various perspectives to successfully complete the project. Innovative thinking is the result of this diversified portfolio.

Our firm, founded in 1977, has embarked on a journey that has been inspiring and humbling. The methodology and tools may have changed since then, but our commitment to working together and fostering innovation will forever be a part of who we are.

***Engineers. Designers. Dreamers. Artists.***  
***We are Taylor RyMar.***



**Photo:**

*Taylor RyMar Corporation has two physical locations in Tempe and Flagstaff, Arizona. However, our work has no borders - we have completed projects in 19 states and 5 countries as of 2016.*

# Our Mission

At Taylor RyMar, our primary focus is on creating meaningful relationships with our clients by listening first, then providing them with a forward thinking, fresh approach to all of their engineering needs. We have developed an expertise in *vertical engineering, renewable energy, and energy services.*

## MECHANICAL ENGINEERING

- HVAC Systems
- Exhaust Systems
- Plumbing Systems
- Process Piping Systems
- District Energy Plants

## ELECTRICAL ENGINEERING

- Power Distribution
- Grounding & Lightning Protecting
- Lighting & Lighting Controls Systems
- Fire Alarm Systems
- Information Technology Systems
- Emergency & Standby Power Systems
- Instrumentation & Controls

## RENEWABLE ENERGY ENGINEERING

- Photovoltaic Systems
- Solar Thermal Systems

## ENERGY ENGINEERING

- Building Systems Commissioning
- Retro/Recommissioning
- Energy Audits
- Life Cycle Cost Analysis

## STUDIES & ANALYSIS

- Building Information Modeling
- Short Circuit Coordination Studies
- Water & Air Distribution Analysis
- Hydraulic Studies
- Arc Flash Studies
- Heating & Cooling System Studies
- Third Party Review & Analysis

## FIRE PROTECTION ENGINEERING

- Fire Protection Systems
- Fire Pump Systems
- Hazardous Materials Analysis

## Areas of Expertise

- Mission critical*
- Healthcare*
- Education*
- Manufacturing*
- Public works*
- Photovoltaic*
- Hospitality*
- Gaming*
- District energy*
- Museums*
- Clean rooms*
- Recreation*
- Urban design*



**Taylor RyMar Corporation or our staff is a proud member of these organizations:**

- *Illuminating Engineering Society*
- *Southwest Safety Training Alliance*
- *American Society of Heating, Refrigerating and Air-Conditioning Engineers*
- *American Society of Plumbing Engineers*
- *Valley Partnership*
- *Central Arizona Society of Healthcare Engineering*
- *IAEI Electrical Inspector General*
- *Arizona Power Quality Association*
- *American Society of Healthcare Engineering*
- *National Fire Protection Association*
- *Society of Fire Protection Engineers*
- *National Council of Examiners for Engineering and Surveying*
- *Association of Energy Engineers*
- *United States Green Building Council*
- *Institute of Electrical and Electronic Engineers*

# VERTICAL ENGINEERING SERVICES

At Taylor RyMar, we specialize in engineering design and consulting services for buildings which involve mechanical, plumbing, process piping, electrical, and fire protection services.

### *Mechanical Systems*

Mechanical engineering encompasses those systems which are vital organs of any building or facility. These vary in specific demands from commercial office use and manufacturing climate control to hazardous and archive storage use.

### *Electrical Systems*

We use leading-edge software along with the most current design standards and codes to design electrical distribution solutions.

### *Fire Protection Systems*

Our fire protection experience includes fire sprinkler and fire alarm systems for warehouses, manufacturing facilities, clean rooms, office buildings, and schools.



Vertical Engineering

*“Taylor RyMar is truly a company that has the owner’s best interest in mind. They are a high quality engineering firm and a great partner to work with.”*

- Michael Montgomery, Phoenix Convention Center



Phoenix Children’s Hospital,  
Phoenix, AZ

# Casino Del Sol Resort - Tucson, AZ

This project involved mechanical, electrical, plumbing and fire protection engineering and design services. The scope included a new four story, 225 room hotel with approximately 170,000 square feet designed to a +3 diamond standard with back-of-house areas, elevator lobbies, fitness and spa center, fine dining restaurant with kitchen, receiving, laundry and housekeeping, mechanical and electrical rooms and other programmed support areas. The Casino expansion portion included approximately 85,000 square feet of expanded gaming for slots, future slot area, new buffet and kitchen facilities, and a Conference Center with event halls, and public and private meeting areas. The project also included a new 295,450 square foot, three level parking garage, a new 17,000 square foot free standing warehouse, and site upgrades including parking lot lighting and signage.

**Cost:**  
\$92,000,000  
**Square footage:**  
550,000



Photo Courtesy Casino Del Sol Resort

# HonorHealth - Scottsdale, AZ

We are proud to have partnered with HonorHealth since 2006. Our relationship has included working at all of their hospitals, providing nearly 100 completed projects. In terms of vertical engineering, one sample project would be the **upgrade to the Shea Medical Center Laboratory** in 2009. This project involved upgrading the existing Lab Hematology Department to replace existing outdated equipment with a state of the art new Beckman-Coulter automated blood analysis system. The construction for this project had to be completed without disrupting Hematology services or functions. Through coordination with the owner, equipment supplier, design team and general contractor it was decided that this would be accomplished in four phases of construction. TRC provided documents outlining these phases including emergency power upgrades and HVAC modifications, temporarily relocating existing equipment, installing new equipment in sections and allowing a three month period for new equipment calibration per manufactures recommendations.

At this same facility, we provided mechanical engineering and design for the **addition of chilled water and heating hot water branch piping** to be located on the hospital roof. The new branch lines were connected to existing utilities in the Central Plants, located at the south part of the hospital, and run north above the roof approximately 700 feet to the third level roof of the existing Tower 'A', terminating below that roof at the Piper Center bridge. We acted as the owner's agent, prime professional, and construction administrator on the project.

**Cost:**  
\$1,400,000  
**Square footage:**  
7,000

**Cost:**  
\$800,000



Photo Courtesy HonorHealth

# ENERGY SERVICES

The Energy Services Division provides district energy system design and consulting, new building commissioning, retro-commissioning, energy engineering and analysis, building and energy systems design assistance, LEED® consulting, and energy modeling for our clients as a value added service. Taylor RyMar currently provides these services to a growing list of clients, including municipalities, architects, contractors, and building owners.

### *Commissioning Authority and Retro-commissioning*

Taylor RyMar provides complete commissioning services for HVAC, electrical, lighting, plumbing, and other building systems for new buildings.

### *District Energy & Consulting*

With specialized experience in central plants and the district heating and cooling industry, we partner with district energy systems nationwide. Taylor RyMar has worked with district energy systems and has connected over 25 million square feet of space to district systems while working with district energy systems in Chicago, Illinois, Cleveland, Ohio and for the last several years in Phoenix, Arizona.

### *Energy Auditing, Energy Engineering, Analysis & Modeling*

At Taylor RyMar, we perform energy audits to evaluate buildings' energy using equipment and performance, analyze energy-using systems and provide recommendations for improvements and design services, and analyze your existing or proposed building to predict energy performance using eQUEST.

*“We are both overwhelmed and extremely satisfied with the experience we’ve had with Taylor RyMar.”*  
- Jim Lodge, NRG Energy Center Phoenix



Energy Services

Luke Air Force Base  
Goodyear, AZ

# Banner Health - Mesa, AZ

Taylor RyMar Corporation continues to strengthen our nine-year partnership with Banner Health. Throughout the relationship, we have completed both mechanical and electrical engineering design projects at three Banner facilities. Additionally, we have completed nearly 30 commissioning or retro-commissioning engagements at multiple Banner Health Facilities.

For example, we provided commissioning services at **Banner Desert Medical Center in Mesa, Arizona for the AHU-15 Replacement Project**. The new air handler unit (AHU) replaced three existing air handling systems that were combined into the new system. The existing AHU's consisted of two variable volume air handling units and a third constant volume unit that served operating rooms. TRC coordinated the new AHU integration, identifying excessive operating pressures in the existing duct systems and limitations with the new system design and new controls sequence that would have hindered the performance of the new AHU-15 system when complete. TRC managed the TAB process, additional air particulate sampling and provided direction to the project team on the startup and operation of the new AHU-15 system to limit any cost or operational impacts for Banner.

**Cost:**  
\$2,400,000



Photo Courtesy Banner Desert Medical Center

# Phoenix Sky Harbor International Airport

- Phoenix, AZ

Terminal 3 at Phoenix Sky Harbor International Airport is the home to consumer-favorites Delta, Frontier, Hawaiian, and Jet Blue airlines. In 2014, Taylor RyMar was contracted to provide commissioning authority services for the five-year, \$590 million modernization of Terminal 3. This project is being completed in phases that include complete systems upgrades to the existing terminal building, a new South Concourse with a new central plant (232,500 square feet with 15 gates), and the complete renovation of the North Concourse (144,500 square feet with 10 gates).

In 2015 alone, over 3.5 million passengers used Terminal 3 as a part of their travels; In 2024, Terminal 3 should expect 11.2 million annual total passengers based on a 58 million annual passenger estimate for the entire airport.

**Cost:**  
\$590,000,000  
**Square footage:**  
550,000



Photos Courtesy City of Phoenix





# RENEWABLE ENERGY SERVICES

At Taylor RyMar, we provide renewable energy production facility engineering, analysis, and design for commercial and utility scale projects.

## **Photovoltaic Systems**

Taylor RyMar's Renewables Division has significant experience in the design of photovoltaic systems for a wide range of clients and sites including roof, ground and canopy systems. Our experience ranges from the design of utility scale systems to distributed commercial systems with fixed and single axis tracking systems. Taylor RyMar has provided engineering, design and construction administration services for over 745 MW of commercial scale PV Systems.

## **Solar Hot Water Systems**

Taylor RyMar has experience in the design of solar thermal projects including a 12.5 Million BTU system for a large aerospace client in Mesa. Taylor RyMar is currently providing design services for 16.4 Million BTU's of systems at 7 sites for a Maricopa County energy savings project.

***“McCarthy has enjoyed working with Taylor RyMar. They are high quality engineers that work tirelessly to bring the best value solution to every McCarthy project. They provide professional engineering and a work ethic which is focused on finding creative engineering options. Through their work, TRC helps McCarthy continue to deliver projects to a growing list of owners across the US.”***

- B. Scott Canada, Vice President of Renewable Energy, McCarthy Building Companies, Inc.



**Hyder II Photovoltaic Generating Facility,  
Hyder, AZ**

# NRG Energy Center - Phoenix, AZ

NRG Energy Center Phoenix (formerly known as “Northwind Phoenix”) is a District Energy company providing distributed chilled water to customers in downtown Phoenix. The project began in 2001 with Bank One Ballpark (renamed to Chase Field, home of the Arizona Diamondbacks) and the Phoenix Convention Center being the primary recipients of this environmentally sound district energy and heat services.

Taylor RyMar provided mechanical and electrical engineering and construction project management services for Plant 2, located within the Phoenix Convention Center. The plant includes four 2,000 ton dual compressor chillers, three 2,000 ton single compressor chillers, and one 1,000 ton shoulder load chiller. The dual compressor chillers can create chiller water directly, or they can be used to build ice using a glycol system within the plant’s 1.2 million gallon thermal storage tank. Power is distributed within the plant via a dual ended 15KV distribution system, fed from two separate utility services.

NRG Phoenix encompasses four miles of chilled-water pipelines and has had a reliability record of 99.9% since 2001. Taylor RyMar’s involvement includes the system that produces and distributes chilled water continually to buildings in Phoenix’s central business district including the City of Phoenix, US Airways Center, Phoenix Convention Center, Arizona State University, Maricopa County, Sheraton Hotel, several biomedical research facilities and high-rise condominiums and office complexes.

**Cost:**  
\$12,000,000  
**Square footage:**  
12,000,000



Illustration courtesy NRG Energy



# Arizona State University Energy Efficiency Upgrades

- Tempe, AZ

Taylor RyMar has an extensive relationship with Arizona State University, completing over 50 projects since 1998. The projects have varied in size and scope, but many of our biggest initiatives were focused on increasing energy efficiency for the Main and West campuses.

We provided the engineering, design and construction administration services for approximately 13.2 MWp(dc) of photovoltaic power production facilities at the following buildings: Bio Design, Weatherup, Carson Athletic Center, Hayden Library, Parking Structure 4, Parking Structure 7, and West Campus Parking Lots 1, 2 and 3.

In addition to the photovoltaic installations, 14 more buildings have received facelifts by modifying existing constant volume multi-zone air handling units and dual duct air handling units to variable volume operation. This also consisted of modifying existing constant volume exhaust systems to variable volume control to maintain building pressurization. Existing pneumatic damper actuators were replaced with electric actuators and existing pneumatic control valves were replaced with electric control valves.

**Cost:**  
\$92,000,000  
**Square footage:**  
550,000



# Our Locations



## Corporate Office

60 E. Rio Salado Parkway  
Suite 1010  
Tempe, AZ 85281  
(480) 951-0517



## Northern Arizona Office

323 N. Leroux Street  
Suite 201  
Flagstaff, AZ 86001  
(928) 255-0410

