



MANUFACTURING & INDUSTRIAL

Restoring America's
Production Capabilities

ZACHRY

CURRENT OPPORTUNITIES AND CHALLENGES IN MANUFACTURING AND INDUSTRIAL

1

GROWTH

- An expanding energy infrastructure, revival of the housing industry supply chain, and demand for transportation equipment contribute to US resurgence
- More companies are "reshoring" to the US seeking strong capital markets, infrastructure and inventory control

2

EFFICIENCY

- Technological innovations, such as digitization, data analytics, and advanced automation, are transforming manufacturing
- Low-cost natural gas encourages domestic production, rather than importation, of goods

3

COSTS

- Aging workforce, lack of skilled workers, especially in middle skills market, hampers growth
- Compliance costs are a factor in everything from product safety to IT security to fair competition

4

UNCERTAINTIES

- Growing federal debt could restrain long-term economic growth
- American educational system declining relative to international peers – deficiencies growing in science, technology, engineering and math

“The top problem facing manufacturing, especially traditional manufacturing, is finding good people for your shop. In fact, I’d go so far as to say that this has been the top challenge in manufacturing for more than the last 10 years.”

President
National Metal Fabricators

Source: Manufacturing.net

ZACHRY ADDS VALUE ACROSS THE LIFECYCLE OF MANUFACTURING & INDUSTRIAL FACILITIES



PLAN

We plan with the end in mind – engineering a facility that makes the optimal use of its site, and is designed for maximum efficiency, ease of maintenance and upgradability. We plan this way because we understand the priorities across the full lifecycle of manufacturing and industrial facilities.



BUILD

The construction phase is where the majority of the project risk resides. That is why Zachry has a self-perform model that allows us to manage project risk more effectively, and to respond to changing customer requirements more swiftly.



RENEW

We work on the assumption that industrial facilities can operate for 80 years or more - that with strategic maintenance and thoughtful capital investments, our customers should be able to extend the productive lives of these facilities for generations.

DISTINGUISHED SERVICE ON MANUFACTURING AND INDUSTRIAL OPPORTUNITIES

THE SCALE

- ✓ We currently perform maintenance, reliability and capital program services at more than 90 customer locations.
- ✓ Multidisciplinary engineering services to the rail industry include more than 100 rail projects completed across the US over the past decade.
- ✓ During a major expansion of the US cement industry, we have constructed facilities that have added approximately 9 million tons per year to the nation's production capability.

THE SKILLS

- ✓ Our industrial projects outside of the energy and chemicals sectors have included rail infrastructure, cement plants, pulp and paper mills, office and warehouse facilities, food and agricultural facilities, mining and minerals, and industrial plant design, construction and maintenance.
- ✓ A Zachry subsidiary, JV Industrial Companies, Ltd. (JVIC), provides industrial clients with best-in-class turnkey solutions for their shutdown and turnaround requirements.
- ✓ Zachry's Fabrication capabilities support project requirements in ASME code pipe, vessels, process modules and structural steel.

THE SAFETY

- ✓ Zachry regularly participates in OSHA's Voluntary Protection Program (VPP) and currently has 14 sites recognized as OSHA STAR sites for their safety practices.

CREATING AND SUSTAINING AMERICA'S MANUFACTURING AND INDUSTRIAL CAPACITY



OUR ADDED VALUE DURING THE PLAN PHASE OF MANUFACTURING & INDUSTRIAL FACILITIES

Our capabilities in the '**PLAN**' phase of manufacturing and industrial project execution include:

- ✓ Project development and consulting
- ✓ Studies and analysis
- ✓ Front-end engineering design (FEED) program execution
- ✓ Full service design engineering
- ✓ EPC execution planning
- ✓ Project and construction management
- ✓ Professional staffing services
- ✓ Plant start-up and commissioning
- ✓ Plant reliability and maintainability program development



CARGILL RELATIONSHIP GROWS TO MORE THAN 400 DESIGN PROJECTS



THE CUSTOMER'S CHALLENGE

Cargill is a major provider of food, agriculture and industrial products. With more than 140,000 employees and hundreds of locations throughout the world, Cargill is constantly generating new facilities and processes that require engineering and design expertise on their way to becoming a part of the Cargill system. While the company typically performs as its own general contractor, design assistance comes from Cargill's select list of suppliers of engineering services. The engineer is brought on from the very beginning to facilitate process design and then provides detailed engineering, remaining engaged with the Cargill team throughout the project's execution.



CARGILL RELATIONSHIP GROWS TO MORE THAN 400 DESIGN PROJECTS



THE ZACHRY APPROACH

Zachry's current status with Cargill under a Select Services Contract evolved from engineering services that began with a single project nearly a decade ago. Working primarily with Zachry's Omaha Design Center, Cargill awarded additional assignments to the Zachry team with consistently positive results. The scope of this work ranges from a quick analysis performed by an individual over a day or two to a project involving detailed design of more than 24,000 engineering hours. To date, Zachry has worked on more than 400 Cargill projects throughout the Midwest.

THE BUSINESS OUTCOMES

Much of the successful relationship between Cargill and Zachry can be attributed to the value both companies share in taking a long-term view. Cargill bases its project model on keeping its engineering work within a select group of suppliers, enabling these firms to build specific competencies in addressing Cargill's needs. Zachry prides itself on repeat business from clients as a testament to the special business experience our company provides.

“Cargill is a large and multifaceted organization. We appreciate the ability to partner with Zachry, recognizing that the knowledge base accumulated over a vast number of projects gets reinvested into the business relationship. We value the quality of Zachry’s services and the team members who provide them.”

Construction Manager
Cargill, Inc.

OUR ADDED VALUE DURING THE BUILD PHASE OF MANUFACTURING & INDUSTRIAL FACILITIES

Our capabilities in the '**BUILD**' phase of manufacturing and industrial project execution include:

- ✓ Integrated, turnkey EPC project delivery
- ✓ Direct hire construction
- ✓ Project management
- ✓ Safety and QA/QC
- ✓ Commissioning and plant/unit startup
- ✓ Small and midsize project experience
- ✓ Large and mega-project experience
- ✓ Firm price, date-certain delivery



CEMENT PLANT PROJECT OVERCOMES SITE'S OBSTACLES



THE CUSTOMER'S CHALLENGE

Titan America sought to expand and modernize its Pennsuco cement plant in Medley, Florida, to yield a better quality product, lower production costs and reduce emissions. The project would increase production capacity from 1 million to 1.8 million tons annually. Zachry would also be called on to replace two wet-process lines once the new dry-process plant became operational. Existing cement grinding facilities, along with the storage and handling systems, would remain in place to support the new plant. Limited construction access and a high water table at the site added to the challenge.



CEMENT PLANT PROJECT OVERCOMES SITE'S OBSTACLES



THE ZACHRY APPROACH

Due to Florida's high water table, Zachry pumped out thousands of gallons of water before pouring concrete, reaching a pumping volume of 12,000 gallons per minute at one point. With the restrictive site access, only material that could be erected each week was brought into the work area. The five-stage pre-heater structure and related equipment was completed three months faster than anticipated using an innovative approach of decking out each floor prior to erecting the next level, allowing other crafts to begin work. Zachry Project Execution Planning Process (ZPEPP), a project management system that maintains focus on the execution plan, fostered strong relationships between key suppliers and built backlogs of materials and information.

THE BUSINESS OUTCOMES

Construction of the plant required only 16 months, finishing two months ahead of the contract schedule. Approximately 80 percent of the project's workers had worked on prior Zachry jobs, lending to the safety and efficiency of the construction effort. There were zero lost time accidents in the more than 1.5 million work hours associated with the project. In addition to offering greater capacity, the new plant is more energy efficient. By burning less fuel, the plant is more environmentally friendly than the original facility.

“From contract negotiations through commissioning and project close-out, we have been impressed with the professional approach and the honest, open communication style that has been displayed by your people... The selection of Zachry as general contractor is one of the best decisions made on the project.”

Pennsuco Project Manager
Titan Cement

OUR VALUE ADDED DURING THE RENEW PHASE OF MANUFACTURING & INDUSTRIAL FACILITIES

Our capabilities in the '**RENEW**' phase of manufacturing and industrial project execution include:

- ✓ Continuous presence plant operations and maintenance services
- ✓ Reliability engineering, assessments & improvement programs and technologies
- ✓ Maintenance skill development
- ✓ Specialty services
- ✓ Turnarounds/outages
- ✓ In-plant capital projects and upgrades



TEAMING ENHANCES PAPER PLANT OPERATIONS AND COMMUNITY INVOLVEMENT



THE CUSTOMER'S CHALLENGE

International Paper attributes its success to a philosophy based on partnerships – both in the business community and in the environs where its employees work and live. As a result, the company has earned recognition for its production and its corporate citizenship. However, like others in its industry, IP faced market pressure during the financial crisis of 2008 to 2011, as well as the added challenges paper suppliers have encountered due to the growth of electronic media. Because paper production facilities are typically located in remote locations relative to population centers, there's also complexity in attracting skilled labor for basic operations as well as supplemental staffing needs.

INTERNATIONAL  PAPER



TEAMING ENHANCES PAPER PLANT OPERATIONS AND COMMUNITY INVOLVEMENT



THE ZACHRY APPROACH

Zachry has provided maintenance and small capital project work to International Paper facilities since the 1980s. With the nation's largest merit shop contractor pool, Zachry provides maintenance at IP's Mansfield, Louisiana facility, adding supplemental staffing when needed. Aware that paper production requires significant investment and lean operating costs, Zachry's team keeps the facility running at high availability. Zachry and IP also share a philosophy about community investment and have teamed to support Providence House (services to the homeless) in Shreveport, as well as creating a technical training program at a local college and giving holiday gifts to disadvantaged children and elderly of the area.

THE BUSINESS OUTCOMES

The chief outcomes of the relationship between International Paper and its maintenance contractor Zachry could be best reflected in the single word sustainability. The familiarity between the companies over the last 30 years has brought trust and operational efficiency to the forefront. Zachry continues to renew a facility that is itself in the business of renewal, taking post-recycled paper waste and processing it for re-use in a variety of applications. The community of Mansfield and its neighbor Shreveport 30 minutes to the north are fortified by the jobs and related economic impact of the plant, but also through IP and Zachry's continuing involvement in civic and philanthropic initiatives in the region.

“Getting involved with an organization like Providence House and getting people on site to support it is nothing but positive for everybody and brings a smile to everybody’s face.”

Zachry Capital Superintendent

OUR ABILITY TO ADD VALUE TO YOUR PROJECT IS THE PRODUCT OF OUR DISTINCTIVE APPROACH

Zachry's approach to business is based on four key principles

Focus on Distinctive Value

We're always looking for ways to deliver distinctive value to our customers – through performance on immediate work and through using the freedom that our structure allows to focus on value beyond today's bottom line.

Priority on Customer Success

We recognize customer success is the basis for our success. We work to understand your goals so we can collaborate effectively and identify opportunities to enhance your business outcomes.

Right Team in the Right Place

We've assembled an extraordinary professional workforce. We continue to invest in training and development to keep their skills on the leading edge.

Adaptive Excellence in Execution

We believe every project is unique. Our self-perform model, integrated capabilities, loyal workforce and stable project teams allow us to deliver outstanding execution safely under any conditions.

WHAT WE WANT YOU TO KNOW

The Zachry Group's approach to doing business is purpose-built to help you take advantage of your biggest opportunities and tackle the challenges that you will face along the way.

Like you, we are completely focused on accountability for results. Our entire operating model is designed to deliver that accountability – from our lifecycle mindset to our self-perform execution capabilities.

We recognize that the projects we do represents some of the biggest commitments that our customers make – not just for them, but for the customers, communities and employees that depend on them.

LET'S CONTINUE THE CONVERSATION IN PERSON

We would welcome the chance to learn more about your needs.



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