



Brown & Root

Brown & Root Industrial Services, LLC

Stennis Business Council Brown and Root Overview

Delivering Execution Excellence

2 August 2023

Forged From the Past. Building the Future.

Content

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2. Committed to Zero Harm
3. About Brown & Root
4. Service Offerings | Project Experience
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6. Technology



Committed to Zero Harm

Zero Incidents is Achievable



Leadership Engagement

Zero Incidents is Achievable
| Personal Commitment | Holistic Approach | Do the Right Thing | Positive Reinforcements

Core Processes

Safety Energy | Keys to Life
| TSTI | Continuous Improvement Programs

Employee Empowerment

Courage to Care | My Key Stop Work

2023 HSE Major Focus Areas

MEASURING LEADING INDICATORS



Driving the leading indicators to achieve the desired behaviors that result in positive outcomes.

AUDITING FOR COMPLIANCE & CULTURE



Regular and systematic reviews to ensure proper alignment with our HSE Program and the consistent strengthening of our ZERO Harm 24/7 culture.

RECOGNITION OF OUR PEOPLE



Supporting our people by recognizing achievements to promote ZERO Harm 24/7 and a safe culture at work and at home.

QUALITY INCIDENT INVESTIGATIONS



Conducting incident investigations in a manner that identifies the Root Cause(s) versus placing blame. Investigations that explore the relationship of causes to Structured Safety Evaluation Trends, Safety Energy Performance and Leading Indicator Information.

EMPLOYEE HSE TRAINING



Conduct HSE training in a quality and effective manner, ensuring those receiving the training are in the best position to understand and apply the training.

BASIC MOBILE EQUIPMENT & VEHICLE OPERATION



Focus on defensive driving, distracted driving, and basic safe operating principles to reduce incidents involving the movement of mobile equipment and operation of motor vehicles.

Safety Stats	2022	2021
Total Execution Hours	18.4M	18.5M
Total Recordable Incident Rate (TRIR)	0.23	0.23
Lost Time Incident Rate (LTIR)	0.00	0.06
Days Away/Restricted or Transfer Rate (DART)	0.07	0.13
Experience Modifier Rating (EMR)	0.56	

Safety Awards Snapshot

- **Central Gulf Coast Industrial Alliance (CGIA)**
 - GCIA Safety Member of the Year (2022)
 - Safest Contractor Award (2021)
 - Safety Member of the Year (2020 & 2021)
- **Associated Builder and Contractors (ABC)**
 - Diamond STEP Award (2015 - 2022)
 - NSEA Safety Excellence Award (2020)
 - AQC Contractor Award (2020 & 2021)
 - National Safety Excellence – Pinnacle Award (2021 & 2022))
- **Houston Business Roundtable (HBR)**
 - Nominated for Safety Excellence Award (2022)
- **Greater Baton Rouge Industry Alliance (GBRIA)**
 - First Place Division 3 Safety Award (2020)
 - Community Service Award (2020)
 - Contractor Safety Excellence Award (2021)
- **Industry Awards (Various)**
 - South Safety Excellence Award CITGO Corpus Christi South Texas Industrial Industry Safety Excellence (2021)
 - AGC America Safety Awards (2020 & 2021)
 - AFPM Safety Awards (2020 & 2021)

About **Brown & Root**

Building The Future.



Brown & Root

- Privately-held Company with Global headquarters in Baton Rouge, LA
- Established 1919
- Full life cycle **industrial services offering** across customer's entire value chain
- Continuous on-site presence at more than 150+ facilities
- Serving the Energy Transfer, Refining, Chemical & Petrochemical, Midstream & Terminal, Pulp & Paper, and Power Industries

9,500+

Talented Employees

Corporate Headquarters:

Baton Rouge, LA

Regional Offices:

*Mobile, AL
El Dorado, AR
Los Angeles, CA
Atlanta, GA
Addis, LA*

*Lake Charles, LA
New Orleans, LA
Plaquemine, LA
Port Allen, LA
Taft, LA*

*West Monroe, LA
White Castle, LA
McPherson, KS
Columbia, MO
Jefferson City, MO*

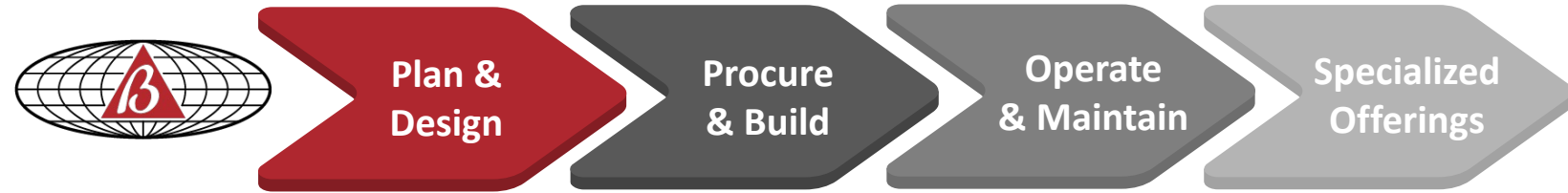
*Kansas City, MO
Hancock County, MS
(Stennis Space Center)
Austin, TX
Baytown, TX*

*Corpus Christi, TX
Dallas, TX
Deer Park, TX
Houston, TX*

*Arlington, VA
Seattle, WA
Vera Cruz, Mexico*

What We Do

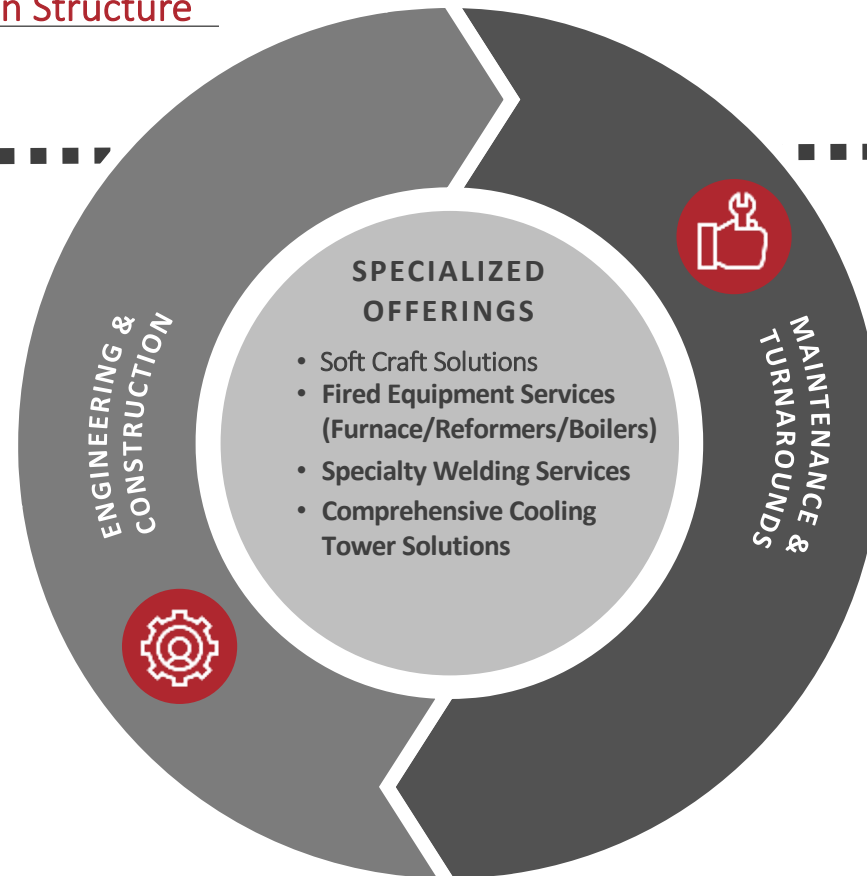
High-Value Services to Support Every Project Phase



Through a Solutions Driven Structure

ENGINEERING & CONSTRUCTION

- Turnkey EPC
- Full-Service Engineering
 - Conceptual Design, Project Definition, FEL, Detailed Design, Procurement, Survey, Laser Scanning Services
- Turnkey Construction
 - Construction Management
 - Direct Hire Construction (Civil, Mechanical, Soft Crafts)



MAINTENANCE & TURNAROUNDS

- Full-Service Maintenance Solutions
 - Total, Supplemental, Reliability, Sustaining Capital & Other Support Services
- Turnarounds, Outages & Shutdowns
- Emergency Response
 - Catastrophic Events
 - Natural Disaster Relief

What **We Do**



ENGINEERING & CONSTRUCTION



EPC Solutions From **The Expert**

Delivering complete turnkey EPC solutions



ENGINEERING &
CONSTRUCTION

- Flexible, customer tailored commercial structures
- Simplified processes, streamlined communications and ensures agile execution for initiatives of all scopes and sizes
- Comprehensive solutions spanning markets and industries, we can tailor thorough, right-sized turnkey solutions that meet the needs of your project
- Decades of experience delivering complex capital projects and mission-critical programs in any environment, no matter how challenging
- Expertise to integrate solutions seamlessly to deliver projects on-time and on-budget, safely and reliably

Procurement / Services

- Providing the transactional and decision support tools required to execute capital projects that deliver value
- Equipment procurement
- Material Supply / Fabrication procurement
- Subcontractor procurement
- Detail tracking & expediting
- Shop inspection & equipment testing
- Spare parts coordination
- Warranty management

Full-Service Engineering

Refining, Petrochemical, Chemical, Terminal Facilities



ENGINEERING &
CONSTRUCTION

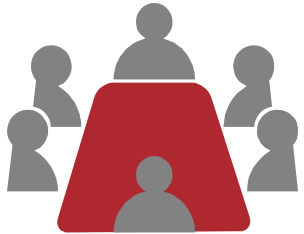
- **Process Engineering**
 - Conceptual Design/Project Development
 - Process Simulation/Optimization
 - Project Economics & Justification
 - Dispersion Modeling & Dynamic Simulations
 - PFD / P&ID / Heat & Material Balance
 - Hydraulic Models
 - Debottlenecking Studies
 - Flare System / Pressure Relief Design
 - Process Safety Management Compliance
 - Due Diligence Activities
 - Cold Eyes Review
 - Equipment Specifications
- **Civil / Structural Engineering**
 - Utilities and Site Development
 - Foundations
 - Truck & Rail Facilities
 - Industrial Structures
 - Ports & Marine
- **Mechanical Engineering**
 - Piping and Mechanical Detailed Design
 - Pipe Stress Analysis
 - Mechanical Troubleshooting
 - Rotating Equipment
 - Heat Exchangers
 - Tanks & Pressure Vessels
- **Electrical Engineering**
 - Medium & Low Voltage Power System Studies: Short Circuit, Coordination, Arc Flash, Load Flow, Motor Starting
 - Electrical Distribution and Generation Systems
 - MV to LV Substation Design
- **Instrument Engineering**
 - Instrumentation, Controls and Security Systems
 - P&ID Control Scheme Development
 - HAZOP & SIS Development
 - Instrumentation and Control System Specifications, Data Sheets, & Bid Evaluation





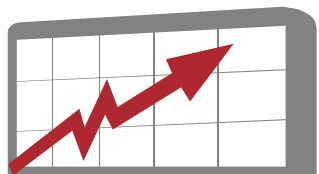
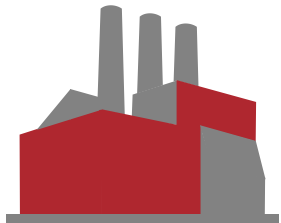
Engineering Qualifications

Accountable Quality Execution



QUALITY, PROFESSIONALISM, AND INTEGRITY.

- Licensed Professional Engineers / Professional registration in 34 states as **BRIS Engineering**
- 50+ Years of Industrial Sector experience
- Engineering offices in *Baton Rouge LA, New Orleans, LA* and *Deer Park, TX*
- Revamps / Grassroots for Refining, Petrochemicals, Chemicals, Midstream and Terminals
- Small-Cap MSA Engineering
- Debottlenecks / Expansions / Utility Systems
- Major Interstate Pipeline engineering – liquid & gas
- Feasibility Studies
- Project Development, Conceptual Design, Front End Engineering
- Permitting / Environmental Engineering
- Detailed Engineering Design and Drafting in all disciplines.
- Surveying / Laser Scanning / 3D Modeling
- High Value Engineering – full-service, multi-discipline resources with over 480 qualified and internationally experienced engineers and designers



General Contractor / Construction Management

A Legacy of On-Time Execution

- Direct Hire Construction / Capital Projects / Construction Management
- Aligned safety vision and core values focused on Zero Harm
- Innovative control of work approach based on lessons learned and best practices ensures consistent, predictable results
- Proven labor strategies that assure continuity of skilled craft labor
- “Done Once, Done Right” culture eliminates rework and ensures on-time project completion
- Licensed in 27 States
- Flexible Service Offering that mitigate risk and deliver predictable results



INDUSTRIAL SERVICES SELF PERFORM

- Civil Construction
- Foundations / Roads / Paving Installation
- Structural Steel Erection
- Mechanical Installation
- Equipment Setting
- Start-up and Commissioning
- Electrical & Instrumentation



COORDINATION OF SPECIALTY CONTRACTORS

- Pile Driving
- Tanks
- Docks
- Administration and Control Buildings



KEY MARKETS

- Oil & Gas
- Refining
- Chemicals
- Pulp/Paper
- Industrial
- Power and Alternative Fuels



SPECIALIZED SERVICES

- Soft Craft Solutions
- Fired Equipment Services (Furnace/Reformers/Boilers)
- Specialty Welding Services
- Comprehensive Cooling Tower Solutions





ENGINEERING &
CONSTRUCTION

E&C Experience

Sampling of Relevant Project Experience

Client	Location	TIC Value	Project	Type
CHS Refinery	McPherson, KS	\$800MM	OSBL Facilities for New Coker Unit	EPCM
Phillips66	Belle Chasse, LA	\$40MM	Small and Mid Cap Portfolio	Engineering & Program Management
Delek	Big Spring, TX	\$80MM	EPC CO Boiler Replacement & Associated ISBL/OSBL facilities	Full EPC
PBF	Chalmette, LA	\$100MM	Multi-Unit Revamp on Cat Feed Hydrotreater, Crude Unit, 2 Sulphur Recovery Units and Amine Treating Unit	E & CM
Ergon	Vicksburg, MS	\$65MM	Grass Roots Propane Deasphalting ROSE unit	Engineering (FEED & Detail Design)
IMTT / Valero	Norco, LA	\$150MM	(3) 5 mile pipelines for Valero, terminal facility for renewable diesel, storage and shipping	Full EPC (Active Project)
Koch	St. James, LA	Confidential	OSBL for Grassroots 1.7MMTPY Methanol Facility	EP & CM
Westlake	Geismar/Plaquemine, LA	\$60MM	PVC and VCM Expansion Project	E & C
EnLink Midstream	Lenorah, TX	\$10MM	EPC for a Cryogenic Facility Expansion	Full EPC
Marathon Petroleum Company	Garyville, LA	\$450MM	Design of 2.4 MM BBL of Storage / Site Work and associated	Engineering (FEL & Detail Design)
Valero Diamond Green Diesel	Norco, LA	\$100MM	Construction Execution of Ecofiner and Renewable Gas Unit	Construction (Active Project)



ST. JAMES METHANOL TERMINAL

Client/Location: Koch Methanol / St. James, Louisiana

TIC: Client Confidential

Scope: EP and CM services for a terminal to support a 1.7 MMTPY Methanol Facility



MARATHON PETROLEUM COMPANY

Client/Location: Marathon / Garyville, LA

TIC: \$450MM

Scope: Design of 2.4 Million BBL of storage / Sitework, foundations, piping, structural supports, mechanical, electrical infrastructure, lighting, grounding, and instrumentation

What **We Do**



MAINTENANCE & TURNAROUNDS



Maintenance Capabilities | Services

The First Name in Industrial Maintenance



MAINTENANCE &
TURNAROUNDS

Full Spectrum of Services:

- Total and Supplemental Maintenance
- Operations Support
- Predictive, Preventive, Corrective Maintenance services
- Small Capital Projects
- Reliability
- Planning & Scheduling
- Multi-Site Agreements
- Facilities Management
- Code Repair Services (P.V., piping, relief devices) – ASME, API

Total Asset Management philosophy:

- Full-service reliability programs
- Planning / Scheduling
- Tools & Equipment Management
- Integration and management of turnarounds, shutdowns & outages
- Performance based contracting models based on Key Performance Indicators (KPIs)

Full-Service Reliability & Consulting:

- Predictive Maintenance (PdM) services
- Precision Maintenance consulting & training
- Maintenance assessments & benchmarking
- Equipment criticality ranking
- Asset maintenance strategy development
- Preventive Maintenance (PM) optimization
- Workflow optimization
- Work sampling, or wrench time studies
- Root cause analysis (RCA) facilitation
- Reliability system modeling
- EAM/CMMS Systems consulting & implementation

Driven towards plant reliability, continuous improvement, greater efficiencies, and lower costs.





Maintenance Experience

Solid Long-Term History



MAINTENANCE & TURNAROUNDS

Long-Term Business Relationships

Brown & Root has had a continuous presence on many of our client sites for more than 20 years. These long-term relationships are a testament to the quality, dependability, and work ethic of our people.

Often the most senior people in the plant, our teams hold a vast store of historical knowledge of the site. Our teams are personally invested in the success of the plant and take full ownership of their work, functioning as an extension of the Owner's staff.

Examples include:

- BASF, McIntosh, AL 63 Years
- Goodyear, Pasadena, TX 48 Years
- Intl Paper, Valiant, OK 50 Years
- Shell Research, Houston, TX 42 Years
- Afton Chemicals, Pasadena, TX 39 Years
- Solvay, Longview, WA 31 Years
- TI, Dallas, TX 31 Years

Multi-site Accounts

For many of our major client accounts, Brown & Root provides on-site teams at multiple operating facilities. We have **world-class systems, processes and procedures** – and demonstrated success in merging them with our clients' requirements to ensure consistency across numerous sites.

Multi Site Customers:

- Albemarle
- BASF
- Celanese
- Chemours
- Corteva Agriscience
- DuPont
- Evonik
- FMC
- Ineos
- International Paper
- Nouryon
- Renewable Energy Group
- Shell
- Solvay
- Texas Instruments
- Veolia
- W.R. Grace



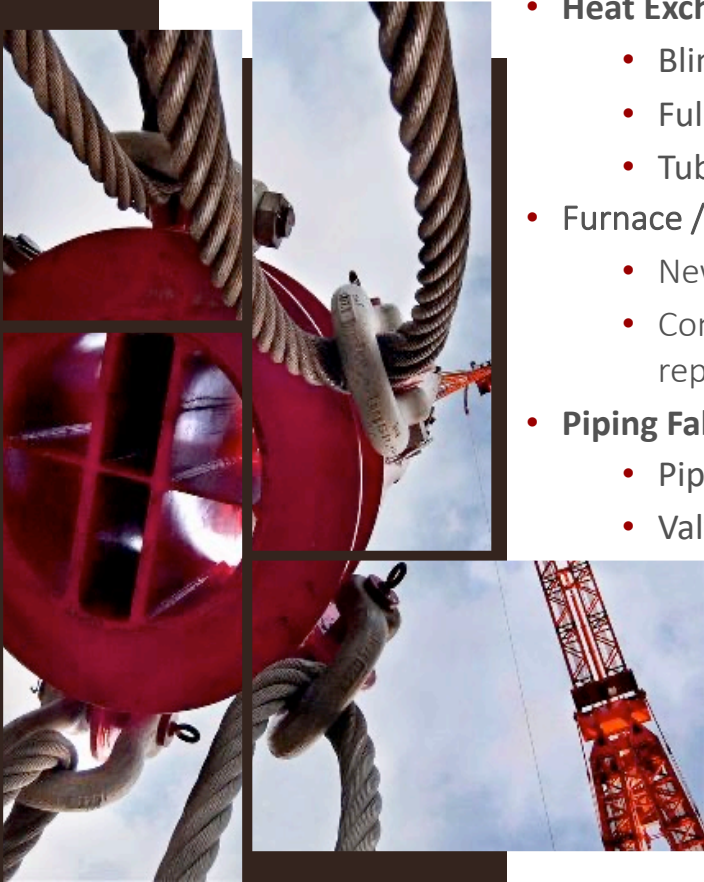
Turnaround Capabilities

Committed to Excellence – Anytime, Anywhere



MAINTENANCE &
TURNAROUNDS

- **Mechanical**
 - Blind, Open, Clean & Repair
 - Towers, Drums, Vessels, Reactors
 - Nozzle Modification & Replacement
 - Vessel Modification & Re-Certification
- **Heat Exchangers**
 - Blind to Blind
 - Full-Service Extraction Equipment
 - Tube bundle clean and transport
- **Furnace / Reformer**
 - New builds and repairs
 - Convection and Radiant tube replacement
- **Piping Fabrication & Installation**
 - Piping Modifications
 - Valve Remove/Replace
- **Specialty Alloy Welding**
 - Heater & Boiler
 - New Installation
 - Radiant Retube
 - Convection Retube/Replace
- **Welding in restricted spaces**
- **New Construction**
 - Capital Project Support
 - Specialty Welders & Fitters
- **Shop Fabrication Facilities**
 - Baytown, Texas
 - Baton Rouge, Louisiana
- **Tank Farm & Terminal Work**
- **Steel Erection**
- **Equipment Operators**
- **Emergency Response**

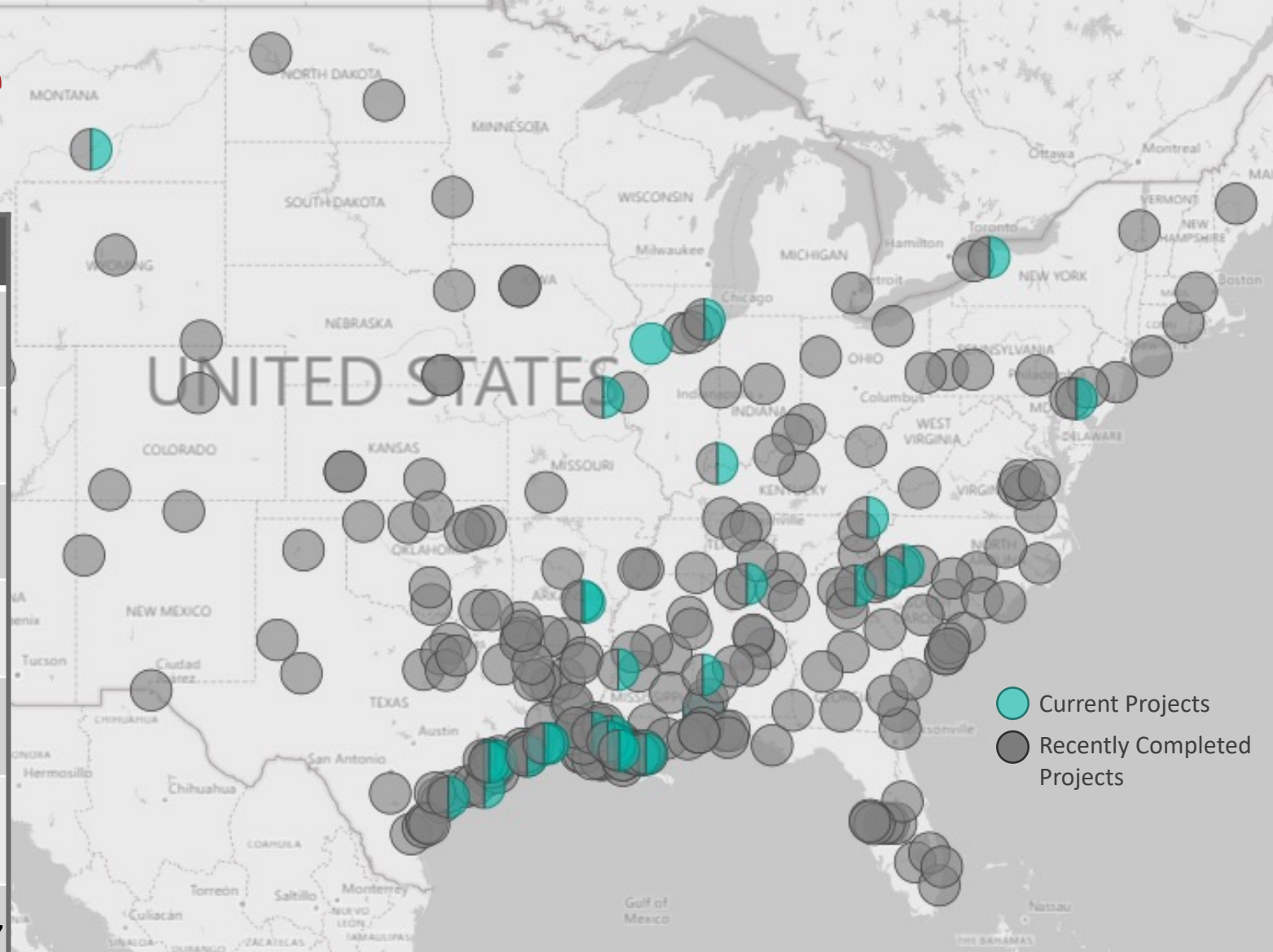


Turn-Key Full-Service Turnaround Expertise

Turnaround Experience

Relevant Project Experience Sampling

Client	Scope/Project	Project Value	Project Location
ExxonMobil	PSLA 7 Mechanical and Scaffolding	\$4.9MM	Baytown, TX
Nutrien	Ammonia Unit TAR	\$17.3MM	Borger, TX
DomTar	#1 and #2 Power Boiler Construction	\$5.5MM	KingsPort, TN
Enlink	Rebuild cells 13 & 14	\$1 MM	Eunice, LA
ExxonMobil	HCN/Sulphur TAR	\$10.2MM	Baton Rouge, LA
International Paper	#1 Recovery Boiler Concrete and Steel	\$1.6MM	Vicksburg, MS
CF Industries	Urea 2	\$3.7MM	Donaldsonville, LA
Shintech	VCM 1	\$4.7MM	Plaquemine, LA



157
Customers

369
Domestic Locations

2,072
Scopes / Opportunities

What We Do



SPECIALIZED SERVICES



Specialty Services

Soft Crafts

Covering it All with Complete Services

- **Scaffolding** - \$20MM in company-owned inventory . Erection, disassembly and removal of scaffold systems with on-site inventory management capabilities
- **Insulation** - Insulation of high temperature systems, cryogenic systems, removable blankets, standing seam panels for tanks and weatherproofing
- **Painting Services** - 90,000 SQFT of covered, indoor shop space with conventional and robotic abrasive blasting
- **Fireproofing** - Certified applicators of lightweight cementitious, dense concrete and intumescent epoxy systems
- **Concrete Coatings** - Application of secondary linings
- **Tank Coatings & Linings** - Application of specialized technical lining systems
- **Blasting and Painting** - Located in Houston, TX (8 Acres) and Addis, LA (18 Acres) on stabilized ground to keep your project going in any weather
- **CUI (Corrosion Under Insulation)** - Turn-key scaffolding, removal and installation of insulation surface preparation and coatings
- **Electrical and Steam Tracing** - Installation of heat and steam tracing systems to improve system thermal efficiency
- **Fabrication** - Removable blankets and insulation
- **Asbestos & Lead Abatement** - Abatement capabilities for encapsulation, demolition, hazardous material control and environmental monitoring



Specialty Services

Cooling Towers

Full-Service Cooling Towers Service – Planning Your Solutions



Cooling Tower Reconstruction

- 30+ year history / 180 talented employee average
- Mechanical equipment repair or upgrade
- Fill system replacement
- Drift eliminator replacement
- Fan deck replacement/repair
- Hot water replacement/repair
- Hot water basin covers
- Crossflow/Counterflow distribution system and nozzle
- Casing and louver replacements
- Thermal performance upgrades
- Turnkey refurbishments
- Experienced with all makes and models

Maintenance Agreements

- Annual inspections by qualified cooling tower technicians
- Interface with customers to plan repairs and capital expenditures
- 24/7/365 ability to respond to an emergency

Inspection Services

- All designed components inspected
- Structural and Mechanical
- Reporting includes:
 - Recommendations
 - Pictures
 - Budgets & Schedules





Specialty Services

Pulp & Paper | Boilers | Digesters

Proven Processes and Technical Expertise



- **Routine Inspection & Repair**
 - Water Wall Tube Replacement
 - Superheater Tube Replacement
 - Economizer and Air Heater Repair
 - Burner Repair/Replacement
 - Air System Repairs
 - Stoker Repairs
 - Soot Blower Repairs
 - Tank/Pressure Vessel Repairs
 - Feed Water Piping and Steam Leak Repairs
 - Feed/Transfer Chute Repair
 - Feed Screw Repair
 - Conveyor Belt/Chain Repair
 - Heat Exchanger
 - Feed Water Heater / Deaerator Repairs
 - Evaporator Inspection & Repair
 - Digester Weld Overlay
- **Major Boiler Rebuilds**
 - New Construction
 - Retrofits
 - Water Wall Panel Replacement
 - Floor Replacement
 - Superheater Replacement
 - Generating Bank Replacement
 - Drum Replacement
 - Economizer Replacement
 - Air Heater Replacement
 - Soot Blower Replacement
- **Steel Erection**
 - Platforms & Ladders
 - Pipe Bridges
 - Walk Platforms
 - Stair Towers
 - Vent Stacks
- **24/7 Emergency Services**



Brown & Root

Adaptable Technology

At Brown & Root, we are continuously seeking ways to implement practical technology and innovative solutions that improve the safety, quality and productivity of our service. Each solution that we have implemented is customized to the unique needs of the project or site. We have included various case studies that demonstrate the solutions and value that our teams are delivering.

Expanding Solutions:



- Mobile/Digital Work Practices
 - Tablet/Smart phone utilization for information sharing
- Remote Confined Space Monitoring Applications

- Safety – Wearable Technology, Smart Safety, Biometric Programs
- Drones
- Enhanced Precision on Laser Scanning

- Predictive Condition Monitoring (Integration of Process Data, IIOT, & traditional PdM)

- Virtual/Augmented Reality applications for training, familiarization, scope review, and business process execution



Accountable Quality

One Team, Done Once, Done Right

- A behavior-based safety mindset is the foundation for instilling a behavior-based Quality mindset
 - Focuses on the individual and their responsibility for quality
- Formalized process for code work and inspection requirements
- Defined hold points to ensure all specifications are met
- Monitoring and behavior reinforcement by site management
- Do it once, do it right mind set

- CQP – Corporate Quality Program
 - Corporate Quality Policy
 - Project Administration Procedures
 - Material Management Procedures
- ASME Code Stamps R, S, & U and National Board Certification
- ASNT Accredited NDE Certification Program
- NACE Certified Inspectors
- API 510, 570, 653 Inspectors
- AWS/CWI Certified Inspectors
- 100+ Qualified Welding Procedures

The collage features several certification documents. At the top left is a National Board Certificate of Authorization for Brown & Root Industrial Services, LLC, with a scope of 'Manufacture of pressure vessels at the above location and field sites controlled by the above location (This authorization does not cover impregnated graphite)'. To its right is another National Board certificate. Below these are ASME Certificates of Authorization for the same company, with a scope of 'Manufacture of pressure vessels at the above location and field sites controlled by the above location (This authorization does not cover impregnated graphite)'. The documents include company details: Brown & Root Industrial Services, LLC, 52410 Clark Rd, White Castle, Louisiana 70788, United States. The ASME certificate is signed by Daniel E. Tuttle, Board Chair, Conformity Assessment, and Joseph [unclear], Managing Director, Conformity Assessment. At the bottom center is a red 'Best PRACTICES' award seal. The Brown & Root logo is at the bottom right.

BROWN & ROOT RECOGNIZES THAT A WORLD-CLASS QUALITY PROGRAM GOES HAND IN HAND WITH A WORLD CLASS SAFETY PROGRAM








Brown & Root

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