

COMPREHENSIVE CAPABILITIES

TECO100
A Century of Glass

TECO GROUP



Toledo, OH

Process Engineering
Project Management
Procurement



Hendersonville, NC

Project Management
Construction Management
Fabrication



Wexford, PA

Process Engineering
Project Management
Procurement



**Sheffield, South Yorkshire,
United Kingdom**



Sheffield, South Yorkshire, UK
Distributors & Forehearth
Engineering
Construction



Sheffield, South Yorkshire, UK
Specialty Glass
Equipment

SIX COMPANIES. ONE CONNECTED RESOURCE FOR GLASS MANUFACTURING.

THE TECO GROUP

ONE GLASS INDUSTRY. ONE CONNECTED TEAM.

Specialized expertise. **Shared** experience. **Solutions** built around your needs.

The TECO Group brings together specialized companies serving different stages of the glass manufacturing process.

From **engineering and project management to melting, conditioning, furnace equipment, construction and installation**, each company brings focused expertise to the challenges glass manufacturers face every day.

PLAN

**Evaluate needs,
opportunities
and project
requirements**

ENGINEER

**Develop practical
solutions around
the glass, process
and plant**

BUILD

**Fabricate, install
and execute with
experienced
field teams**

IMPROVE

**Modernize
equipment, optimize
performance &
extend asset life**

SIX COMPANIES. ONE CONNECTED RESOURCE FOR GLASS MANUFACTURING.



When the project is complex, TECO brings the experience to see the whole process.

From furnace rebuilds and modernization to new glass plants and major expansions, TECO helps manufacturers solve the technical, operational and project challenges that affect **glass quality, production, energy use, campaign life and capital investment.**

WHERE TECO ADDS VALUE

- Furnace design, rebuilds, upgrades and modernization
- New glass plants, expansions and batch plant projects
- Furnace modeling, CFD and process optimization
- Project management, EPC/EPCM and project execution support
- Technical services, audits, troubleshooting and hot repairs
- Batch, furnace, conditioning and hot end process expertise

Glass sectors

Float | Container | Fiberglass | Tableware | Specialty | Lighting | Pharmaceutical | Solar

WHY CUSTOMERS CALL TECO

100 years of glassmaking experience, **1,000+ furnaces built** and experience across virtually every major glass melting technology. TECO brings engineering depth together with practical glass plant knowledge to help customers make sound decisions before, during and after the project.

Since 1927 | Glass Plant Engineering & Project Execution



When you need the right furnace solution for your product, production goals and operating environment.

Tecoglas specializes in glass melting systems for container, tableware and fiberglass manufacturers in Europe, Asia, MENA and South America looking **to increase output, improve energy performance, extend campaign life or achieve more consistent glass quality.** Each application is evaluated around the customer's process, site, fuel availability, emissions requirements and capital strategy.

WHERE TECOGLAS ADDS VALUE

- Recuperative, regenerative, oxy-fuel and electric melt furnaces
- Furnace modernization and performance upgrades
- Electric melting and electric boosting
- Furnace modeling and process optimization
- Glass conditioning and forehearth integration
- Project planning, engineering, installation and commissioning

Glass sectors

Container | Fiberglass | Tableware | Float | Specialty | Borosilicate

WHY CUSTOMERS CALL TECOGLAS

A strong European presence backed by the depth of the TECO Group, with a history rooted in electric glass melting and furnace technology. The focus is straightforward: **the right melting solution for the glass, the plant and the business case.**

30+ Years | Glass Plant Engineering & Furnace Technology



When melting performance, production capacity or glass quality needs to improve without compromising the process. KTGSI brings specialized glass melting expertise to projects involving **soda lime, borosilicate and specialty glass**, with particular strength in electric melting, boosting and furnace process improvements.

WHERE KTGSI ADDS VALUE

- Electric boost and all-electric melting systems
- Glass melting and conditioning engineering
- Furnace upgrades and modernization
- Process improvements focused on capacity, quality and energy
- Engineering, project management and construction
- Solutions for new furnaces and existing campaigns

Glass sectors

Container | Tableware | Borosilicate | Specialty Glass

WHY CUSTOMERS CALL KTGSI

KTGSI combines engineering and field experience with practical knowledge of how glass actually melts and conditions in production. The result is **process-focused solutions designed around the customer's furnace, glass and production objectives.**

30+ Years | Glass Plant Engineering & Furnace Technology

KTG ENGINEERING®

When a furnace needs the right equipment, a critical repair or experienced hands in the field.

KTG Engineering supports glass manufacturers with specialized furnace equipment and services designed to **keep production moving, improve furnace performance and address difficult maintenance work safely and efficiently.**

WHERE KTG ENGINEERING ADDS VALUE

- SX electrode holders and custom electrode holder solutions
- Electric boost and bubbler systems
- Batch chargers and furnace equipment
- Spy hole covers and related furnace hardware
- Electrode installation, advancing and replacement
- Bottom and sidewall drilling
- Hot work, maintenance, commissioning and emergency repair

Glass sectors

Container | Tableware | Borosilicate | Specialty | Fiberglass | Float

WHY CUSTOMERS CALL KTG ENGINEERING

Decades of experience in glass furnace equipment, installation and hot work, backed by the resources of the TECO Group. From a replacement component to a complex in-furnace service, KTG brings **specialized knowledge where the work is most critical.**

30+ Years | Glass Furnace Equipment & Hot Work Services



When the glass is melted, but getting the temperature and flow exactly right is the next challenge.

ZEDTEC specializes in the **forehearth and working end**, helping glass manufacturers achieve the consistent glass temperature, conditioning and delivery their forming process requires.

WHERE ZEDTEC ADDS VALUE

- Forehearth and working end design
- Glass conditioning strategies
- Rapid Cool Technology
- Combustion and cooling air systems
- Refractory and control strategies
- Computer modeling, temperature profiling and head loss calculations
- Installation, commissioning and technical support

Glass sectors

Container | Tableware | Fiberglass | Specialty Glass

WHY CUSTOMERS CALL ZEDTEC

More than 40 years focused on glass conditioning and **1,000+ installations worldwide**. ZEDTEC designs around the actual manufacturing process, helping customers address production rate, temperature control, space limitations, fuel efficiency and glass quality.

40+ Years | Glass Conditioning & Working End Technology



When the engineering is complete, the project still has to be built safely, correctly and on schedule.

DREICOR brings specialized glass plant construction expertise to **new plants, furnace projects, rebuilds, expansions and complex industrial installations**, reducing the number of contractor interfaces a customer has to manage.

WHERE DREICOR ADDS VALUE

- Structural steel fabrication and erection
- Process piping and ductwork fabrication and installation
- Furnace and process equipment installation
- Construction management and site supervision
- Safety management and field execution
- Procurement, fabrication and construction
- Turnkey project execution and commissioning support

Glass sectors

Glass Plant Construction & Industrial Fabrication

WHY CUSTOMERS CALL DREICOR

Over 45 years of glass plant construction experience, with the ability to **self-perform critical construction disciplines** and coordinate directly with TECO Group engineering resources. DREICOR helps turn a technically sound design into a safely executed project, with greater control over **schedule, quality, cost and constructability**.

45+ Years | Glass Plant Construction & Industrial Fabrication

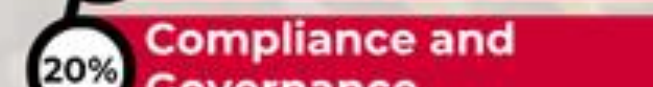
TECO LEADERSHIP TEAM

MORE EXPERIENCE, LESS RISK.

Our in-house multi-disciplinary team of engineers, project managers and leadership provide you unmatched quality control and decades of glass industry experience.









TECO TECHNICAL, PM & ENGINEERING LEADERSHIP

MORE EXPERIENCE, LESS RISK.

TECO 100
A Century of Glass



Eddie Ferreira
Technical Director Vice President

23
YEARS IN THE GLASS INDUSTRY

- 23 Years of Experience
- 33% Design
- 66% Process Engineering

TECO 100
A Century of Glass



Kevin Cygan
Director of Projects

8
YEARS IN THE GLASS INDUSTRY

- 16 Years of Experience
- 40% Production Mgmt.
- 40% Design
- 20% Construction

TECO 100
A Century of Glass



Ryan Courtney
Manager of Engineering

15
YEARS IN THE GLASS INDUSTRY

- 24 Years of Experience
- 40% Resource Mgmt.
- 35% Standards and Governance for Policies, Procedures, & Best Practices
- 35% Project Planning, Scoping & Execution

TECO 100
A Century of Glass



Erik Selewski
Batch Department Manager

8
YEARS IN THE GLASS INDUSTRY

- 17 Years of Experience
- 40% Engineering Design
- 50% Team Leadership & Development
- 10% Construction

EXPERIENCE YOU CAN TRUST SINCE 1927

TECO is an engineering and project delivery organization specializing in complex industrial process facilities, bulk material handling systems, and advanced manufacturing projects.

We deliver industrial manufacturing projects through integrated engineering, project controls, procurement, and construction management.

Our multidisciplinary team of engineers, project managers, and technical specialists leverages decades of industrial manufacturing experience to deliver innovative solutions and successful project outcomes.

By combining technical expertise with a deep understanding of our clients' objectives, we provide the leadership, coordination, and execution required to engineer projects from concept to operation.

WHY TECO

TECO delivers complex industrial manufacturing projects through an integrated approach that unites engineering, procurement, construction, and commissioning teams to achieve safe, reliable, and cost-effective project execution with predictable outcomes in schedule, budget, and performance.

INTEGRATED DELIVERY MODEL

- Front End Loading (FEL)
- Engineering
- Procurement
- Construction Management
- Startup & Commissioning

CORE DIFFERENTIATORS

- Advanced project controls and performance management
- Deep industrial process engineering expertise
- Large-scale material handling and batch system experience
- Collaborative 3D design and digital engineering environment
- Proven execution of complex manufacturing facilities

UNDERSTANDING YOUR OBJECTIVES

CHALLENGES OUR CLIENTS FACE

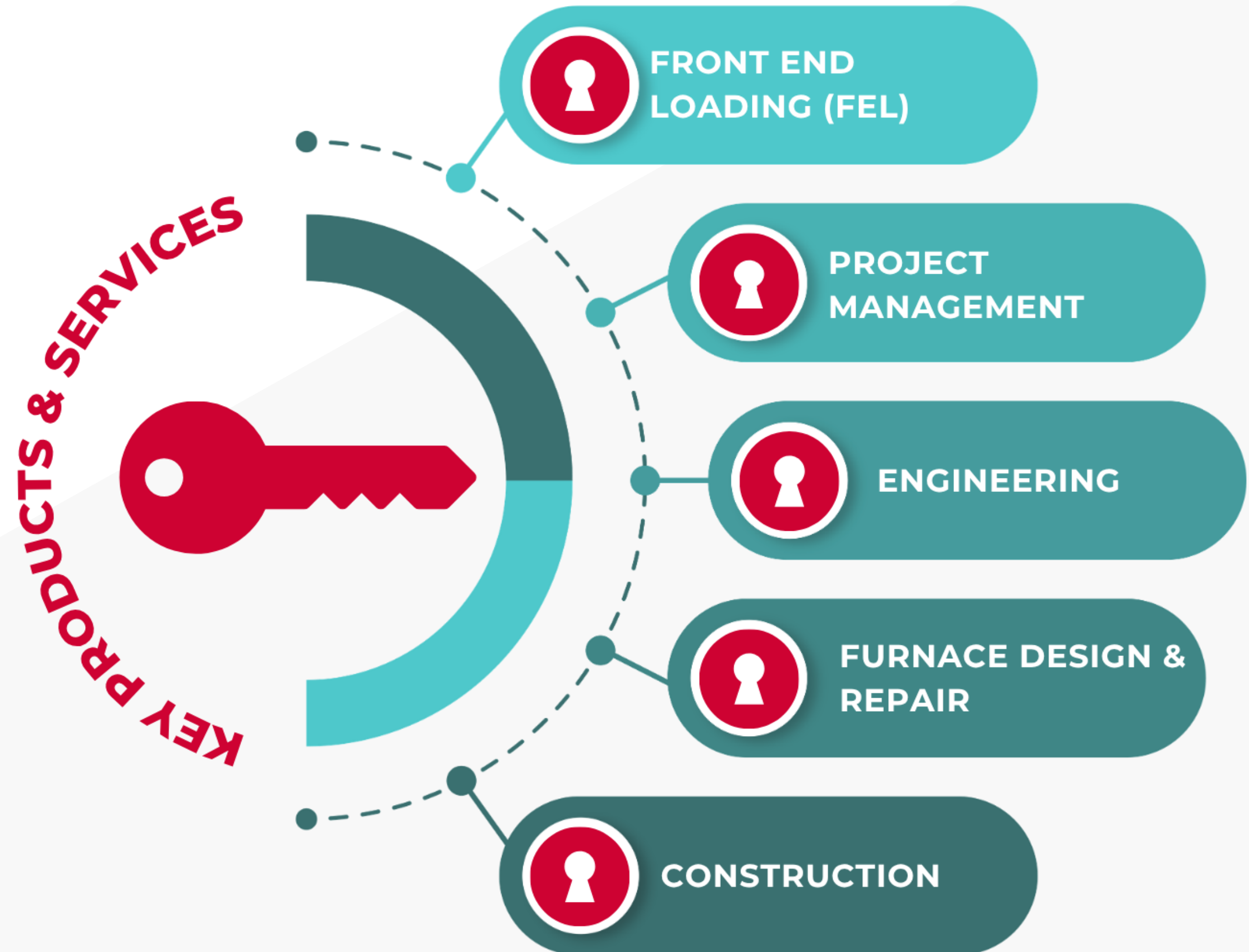
- Accelerating time-to-production
- Managing capital expenditures
- Integrating multiple equipment suppliers
- Ensuring safe and reliable operations
- Controlling schedule and execution risk
- Scaling manufacturing capacity
- Limited internal resources

HOW TECO HELPS OVERCOME THE CHALLENGES

- FEL-driven project planning
- Integrated engineering and project management
- Procurement and supply chain management
- AI powered cloud-based software for document and drawing control which enables data driven decision making
- Construction oversight and startup support

COMPREHENSIVE CAPABILITIES

We leverage our key products and services to help control project inflation and minimize the total cost of ownership



FRONT END LOADING: REDUCING RISK BEFORE CAPITAL IS COMMITTED

FEL project management is a strategic approach aimed at improving project success rates by thorough planning and evaluation in the early stages.

Risk Management

By conducting comprehensive risk assessments and feasibility studies in the initial stages, FEL enables project teams to anticipate potential threats and uncertainties.

Stakeholder Alignment

Initial formal reviews enhance project outcomes by ensuring stakeholder alignment.

Capital Expenditure Utilization

With FEL, funds are allocated appropriately and effectively, through value engineering, making the most of your money.

FEL DELIVERABLES

FEL-1

OPPORTUNITY IDENTIFICATION & ASSESSMENT

- Total installed cost (TIC) estimate is +/-50% for project feasibility
- Establish project goals, constraints, and high-level requirements
- Identify potential risks and opportunities early
- Outline a high-level schedule to support initial decision-making
- Major equipment lists
- Process flow diagrams

FEL-2

SCOPE DEVELOPMENT & CONCEPTUAL ENGINEERING

- TIC Estimate of +/- 20 to 30%.
- Perform preliminary process, utility, and layout studies
- Process description
- Preliminary P&ID's & Single Lines
- Equipment & instrumentation lists

FEL-3

FRONT-END- ENGINEERING DESIGN

- TIC Estimate of +/- 5 to 10%
- Finalize detailed design and engineering documentation
- Deliver project-ready specifications, drawings, and scope packages
- Support bid solicitation, vendor evaluation, and procurement readiness
- Conduct constructability reviews and execution risk mitigation

WHAT SETS TECO APART

TECO delivers engineering insight based on experience. Our team analyzes every assessment through the lens of real-world plant design and operations, transforming field data into practical recommendations that improve performance today while supporting future modernization and growth.

How We Deliver Value

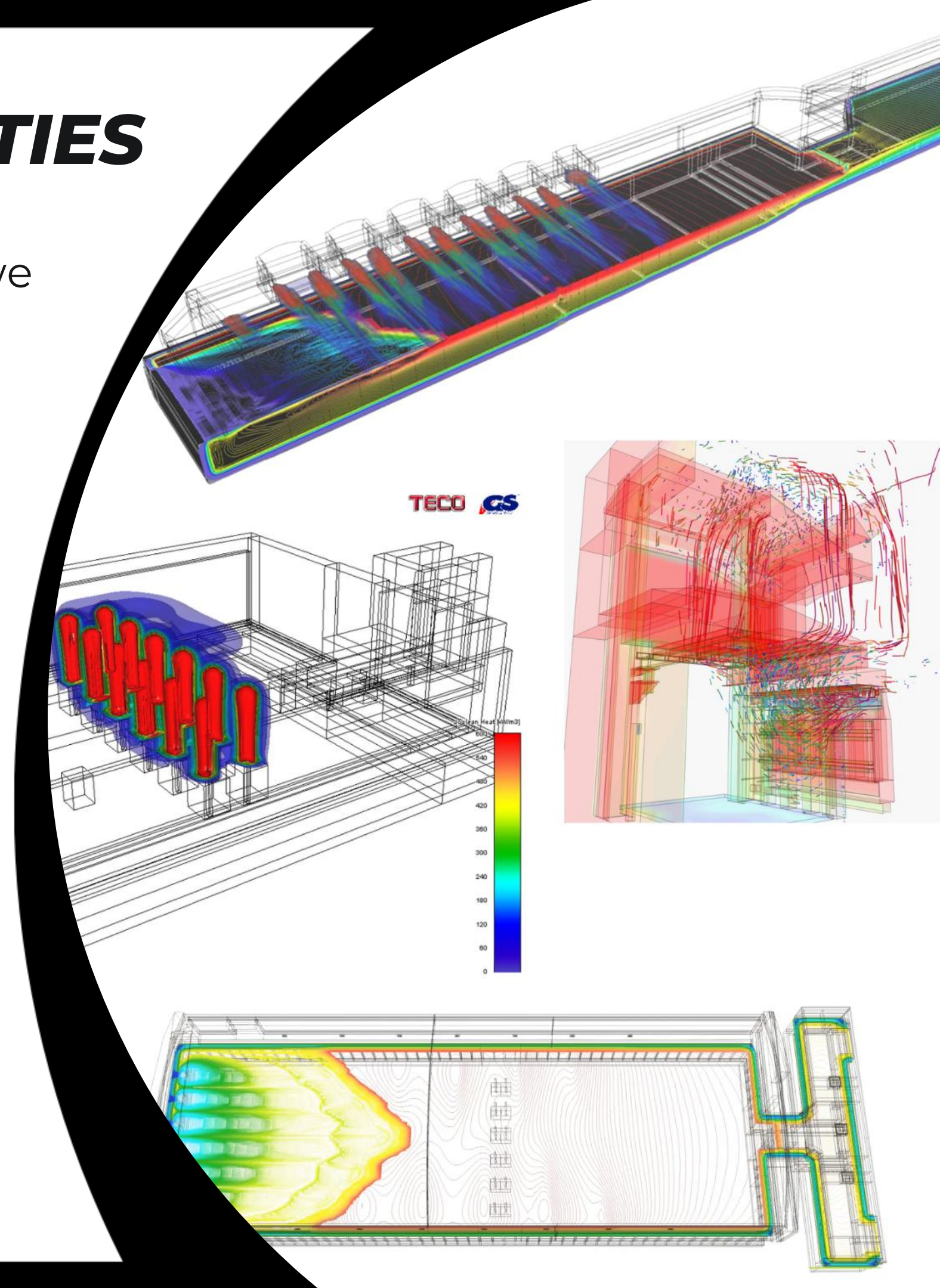
- CFD analysis with operational insights and furnace design evaluations
- Engineering analysis, not just data collection
- Actionable recommendations tailored to your facility
- Identification of process bottlenecks and inefficiencies
- Opportunities to improve safety and maintainability
- Support for retrofit, expansion, and modernization projects
- Unbiased engineering solutions focused on long-term performance
- Expertise spanning the entire glass manufacturing process
- From assessment through implementation, one trusted engineering partner

TECHNICAL SERVICES & CAPABILITIES

Our approach combines advanced field technologies with engineering expertise to deliver more than accurate data, we provide practical insights that help optimize plant performance, improve reliability, and support smarter operational and capital decisions.

What we focus on:

- Digital facility documentation
- Existing condition assessments and as-built verification
- Engineering evaluations and technical consulting
- Process optimization and performance improvements
- Equipment condition assessments
- CAD, BIM, and engineering-ready deliverables
- Actionable recommendations backed by engineering expertise
- Solutions that improve efficiency, reliability, and safety
- Process design and glass technology
- Furnace and front-end design for all furnace and product types



TECO TECHNICAL LEADERSHIP TEAM

The expertise behind our design recommendations...engineers transforming data and experience into practical solutions.

These key players in our technical department have skills spanning the glass manufacturing process from raw materials to final products, backed up by relevant production experience.



Eddie Ferreira
Technical Director Vice President



23

YEARS IN THE GLASS INDUSTRY

23

Years of Experience

33%

Design

66%

Process Engineering



Jim Uhlik
Vice President Technical Services



46

YEARS IN THE GLASS INDUSTRY

46

Years of Experience

40%

Technical Sales

40%

Business Development

20%

Process Engineering



Brian Naveken
Manager of Technology & Technical Sales Administrator, Supervisor of Information Technology



28

YEARS IN THE GLASS INDUSTRY

42

Years of Experience

60%

Furnace & Tin Bath Design

20%

CFD Modeling

15%

Technical Sales



Jonathan Blevins
Senior Furnace Design Engineer



7

YEARS IN THE GLASS INDUSTRY

20

Years of Experience

50%

Modeling & Design

50%

Test



Kirk Holmes
Senior Engineer - Technical Services



19

YEARS IN THE GLASS INDUSTRY

19

Years of Experience

20%

Glass Science & Technology

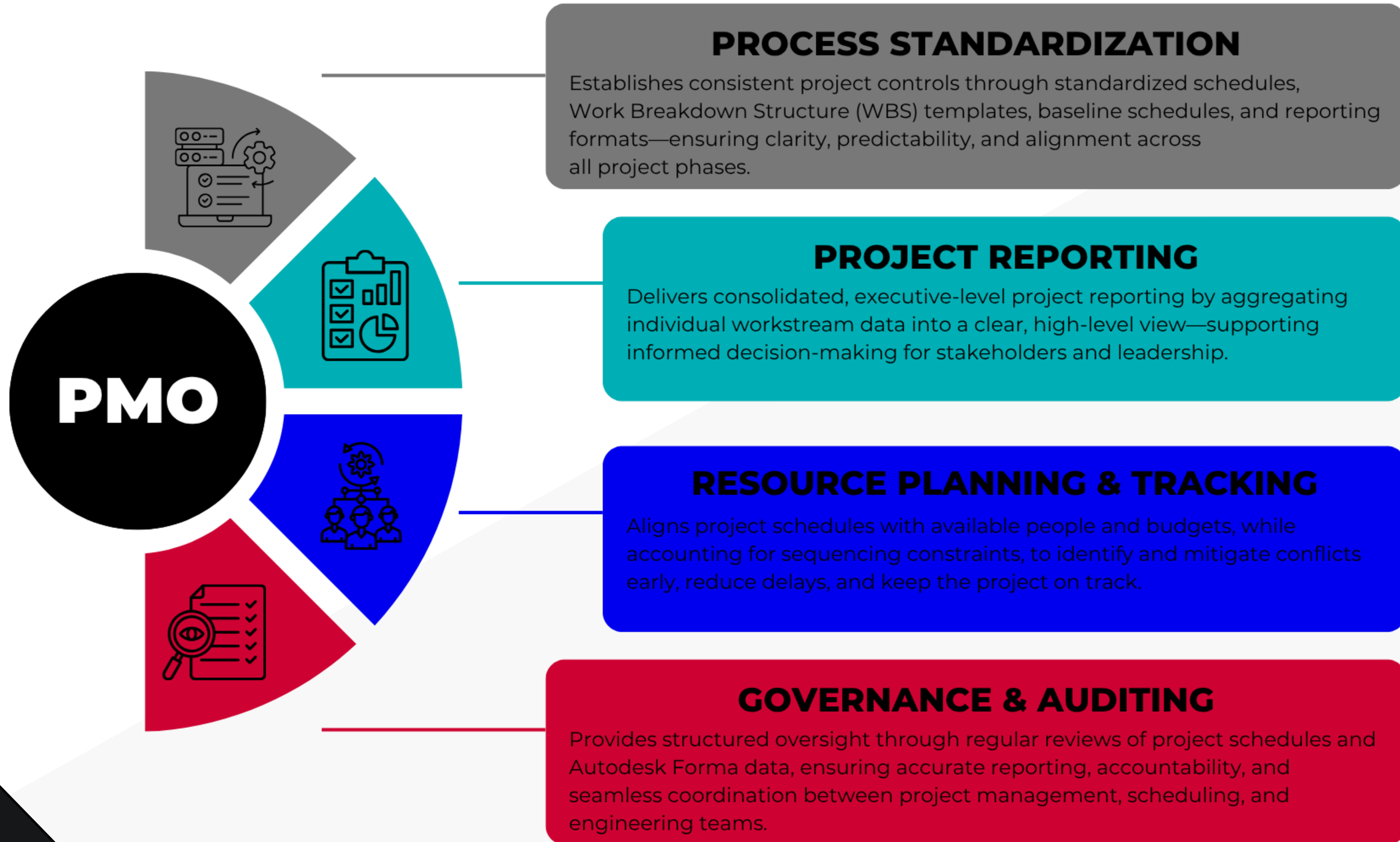
50%

Batch Plant Design & Operations

30%

Furnace Design & Operations

PROJECT MANAGEMENT OFFICE (PMO)



IT'S ALL ABOUT COMMUNICATION



1

Regular Design/Concept Review

Checkpoints are important to ensure that the project stays aligned with its objectives, scope, and requirements. By conducting these reviews, our teams can identify any deviations or discrepancies early on, allowing for timely adjustments and corrections.

2

Cooperative & 3D Conceptual Design

A shared 3D conceptual design environment supports collaboration and clear communication, enabling teams and stakeholders to align early and resolve issues efficiently. This intuitive visualization helps leaders quickly understand project intent, validate scope and sequencing, and make informed decisions while reducing risk.

3

Change Management

A formal change management process evaluates, documents, and tracks scope, schedule, and cost impacts against approved baselines. Defined review and approval controls ensure full traceability, transparency, and disciplined execution throughout the project lifecycle.

4

Open Issues Meetings

This proactive approach helps to prevent issues from escalating into more significant problems, ultimately contributing to the overall success and efficiency of the project.

5

30/60/90% Percent Design Reviews

Structured design reviews that align stakeholders early and often, providing clear visibility into progress and deliverables, enabling timely feedback, and preventing late-stage changes from disrupting schedule, cost, or project outcomes.

ENGINEERING & DESIGN CAPACITY

TECO's engineering team delivers practical, constructible solutions for complex industrial manufacturing facilities. Our engineers develop integrated process and utility systems that prioritize operational reliability, maintainability, safety, and long-term performance while supporting efficient project execution.

- Multi-disciplined design staffing adapts to schedule and demand fluctuations.
- Expert design team enhances simultaneous collaboration across engineering disciplines
- Access to additional engineering hours through affiliates and design partners.

CIVIL & STRUCTURAL ENGINEERING EXPERTISE

- Facility & Equipment Foundations
- Structural Steel Design
- Equipment Support Structures
- Site Development & Layouts
- Building & Process Structures
- Constructability & Safety Integration

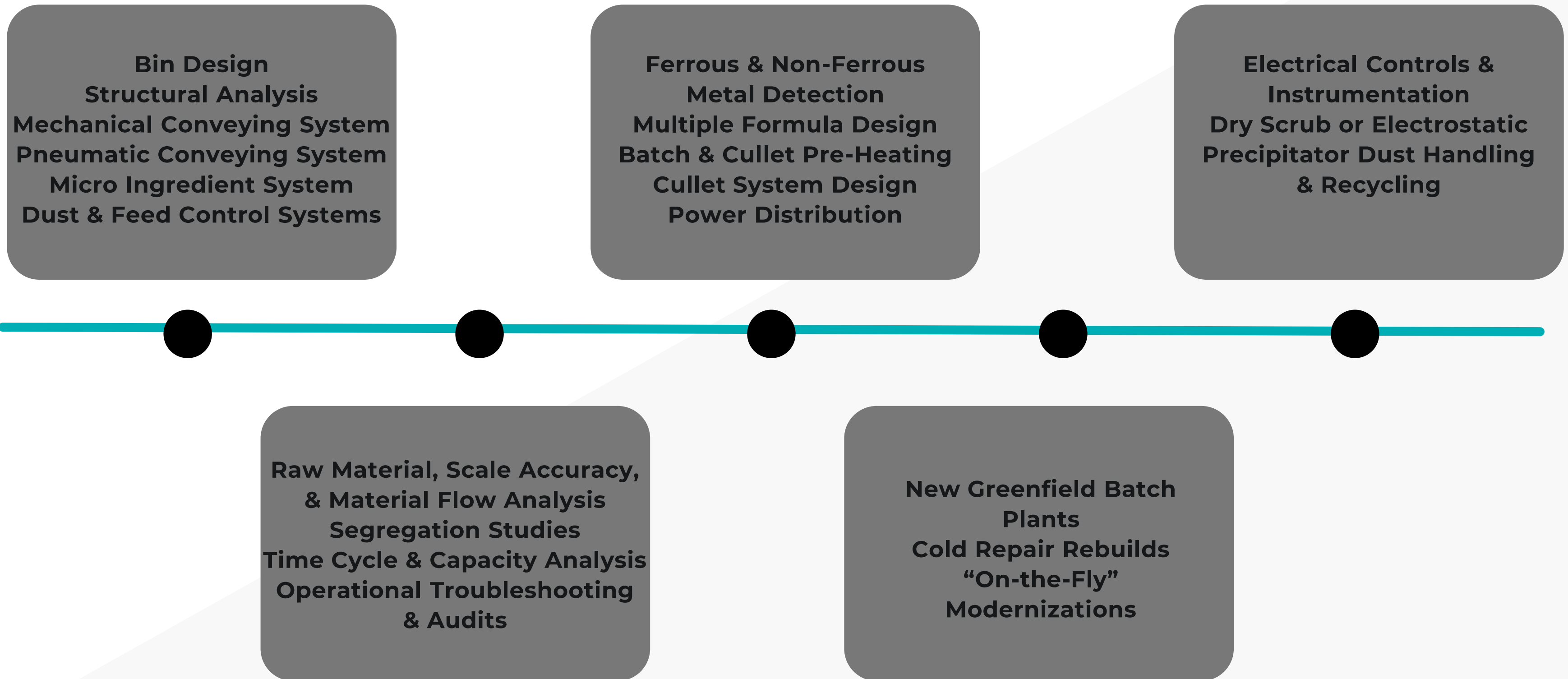


BATCH & MATERIAL HANDLING EXPERTISE

- Batch Audits and Timing Charts
- Raw Material Receiving & Storage
- Material Handling & Conveying
- Precision Dosing & Batching
- Process Integration
- Dust Collection & Environmental Controls
- Material Traceability & Quality Assurance



BATCH & CULLET SYSTEM CAPABILITIES & SERVICES



REFRACTORY ENGINEERING EXPERTISE

- High-Temperature Process Systems
- Refractory Material Selection
- Thermal Containment Design
- Equipment Thermal Performance
- Heat Loss Reduction
- Asset Life Extension



MECHANICAL ENGINEERING EXPERTISE

- Process Piping Systems
- Utility Distribution Networks
- Cooling Water Systems
- Compressed Air Systems
- Process Equipment Integration
- Equipment Layout & Accessibility



ELECTRICAL ENGINEERING EXPERTISE

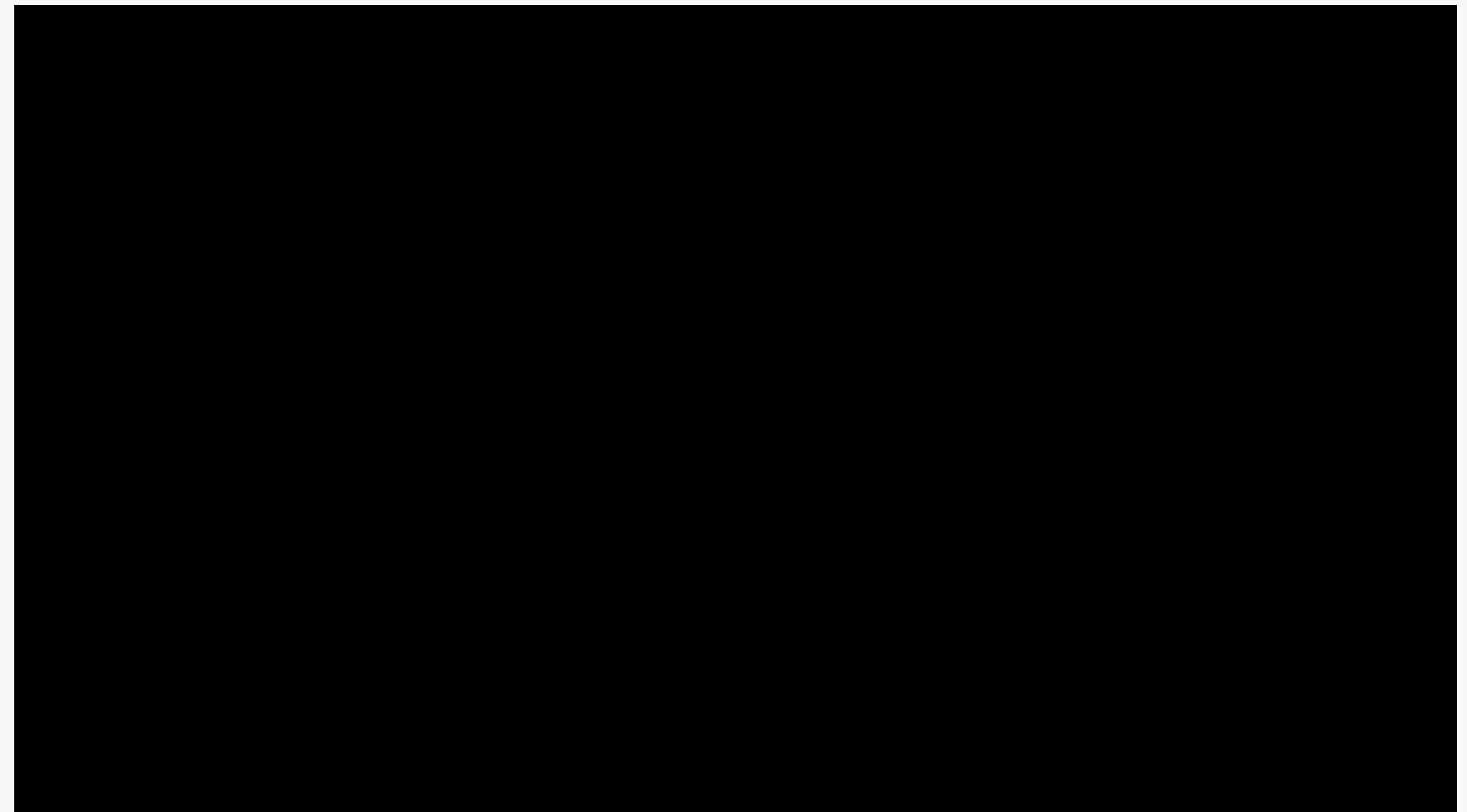
- Power Distribution Systems
- Medium & Low Voltage Infrastructure
- Controls & Automation Integration
- Emergency & Backup Power Systems
- Power Quality & Conditioning
- Utility Coordination & System Reliability



MOST RECENT PROJECT EXPERIENCE

Greenfield Large-Scale Industrial Manufacturing Facility – Completed on time and under budget

- 150-acre site
- 500,000ft² under roof.
- EPCM delivery
- Peak of over 500 personnel on site during construction
- 750,000 man hours worked, no lost time accidents
- 18 months from start of site work to completion
- 12 MW connected power, eight substations, two 2MW generators
- 2,000 tons of fabricated process support steel designed and installed
- 25,000 feet of piping modeled, designed and installed



MOST RECENT PROJECT EXPERIENCE

Brownfield Large-Scale Industrial Manufacturing Facility – Project completed on time and under budget

- 18-acre site
- 112,000ft² under roof.
- Peak of over 350 personnel on site during construction
- 730,000 man hours worked, no lost time accidents
- 14 months from start of site work to completion



THANK YOU

TECO is ready to deliver a solution that fits your timeline, budget, and production goals, without compromise.



Office



3400 Executive Parkway



+1-419-537-9711



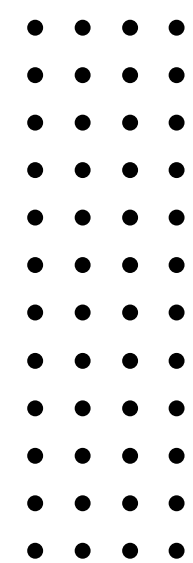
www.teco.com



linkedin.com/company/toledo-engineering-co



youtube.com/@ToledoEngineeringCo.Inc.

A decorative pattern of small black dots arranged in a grid, located in the top right corner of the page.