



HIXSON

ARCHITECTURE ENGINEERING INTERIORS

659 VAN METER STREET
CINCINNATI, OH 45202
Phone: 513 . 241 . 1230
Fax: 513 . 241 . 1287
Website: www.hixson-inc.com
Email: info@hixson-inc.com

IN-HOUSE EXPERTISE

At Hixson, it is not enough to offer only a part of the package. Instead, we provide outstanding comprehensive architecture, engineering, and interior design capabilities. From site selection and design through construction administration, Hixson offers clients a range of services that can be used individually or as part of a larger, value-driven solution within 16 integrated, technical disciplines. The range of our specialized knowledge and experience in the food industry is summarized on the following pages.

- Project Management
- Process
- Manufacturing
- Automation
- Refrigeration
- Electrical
- Mechanical
- Plumbing & Fire Protection
- Environmental Health & Safety
- Civil
- Structural
- Architecture
- Animation
- Interiors
- Cost Estimating
- Construction Administration



Project Management

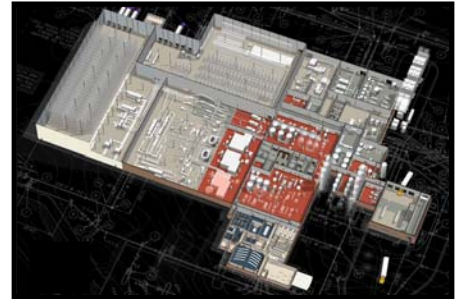
Throughout the entire project lifecycle, Hixson projects are led by an associate from the Project Management group. These team members oversee the day-to-day details that the success of the project hinges upon. Project Managers work closely with Hixson's Production Planning group who closely monitor the progress of all projects to ensure corporate resources are allocated appropriately and used effectively so budgets and schedules remain on track.

Architecture/Interiors

- Facility Layout
- Sanitary Design
- Conditioned Spaces; -20⁰F to +110⁰F
- Material, Product, Personnel and Waste Stream Flow
- Hazardous Materials Storage and Handling
- Laboratories – Plant, R&D, Pilot Plant
- Employee Effectiveness
- Plant Security
- Sustainable Design
- Code Analysis
- Zoning and Code Variance Presentations
- Programming
- Space Planning
- Corporate Image
- ADA Compliance

Animation

- 3-D Renderings
- Photo Compositing
- Animated “Fly-Overs”
- Virtual Tours

**Structural Engineering**

- Facility Structural Evaluation
- Framing Design: Steel, Concrete, Pre-cast, Tilt-up
- Foundation Design: Standard & Deep Building Foundations, Silo/Tank/Equipment Foundations
- Slab Design: Slab-on-Grade and Elevated Slabs
- Lateral Analysis: Seismic and Wind
- Support Platforms and Racks for Refrigeration, HVAC and Process Equipment
- Special Structural Elements: Retaining Structures, Utility/Pedestrian Bridges

Civil Engineering

- Site Selection
- Layout
- Utilities
- Security
- Corporate Image
- Site Grading
- Site Drainage
- Storm Water Management
- Site Access
- Traffic Flow
- Site Utility Analysis
- Pavement Design
- Building Foundation Design



Systems Engineering - Manufacturing

Filling & Packaging

- Filling and dry liquid
- Capping
- Blow molding
- Accumulation
- Labeling
- Case and tray packing
- Container handling
- Palletizing
- Stretch wrapping
- Bulk depalletizing and unscrambling
- Package inspection systems

Packages

- Bag-in-Box
- Bottles – plastic and glass
- Corrugated – trays and cases
- Canisters
- Cartons
- Controlled and modified atmosphere
- Cups
- Form, fill and seal
- Pouches
- Super sacks
- Drums and pails

Warehousing

- AS/RS systems
- Racking systems
- Picking systems

Systems Engineering - Process

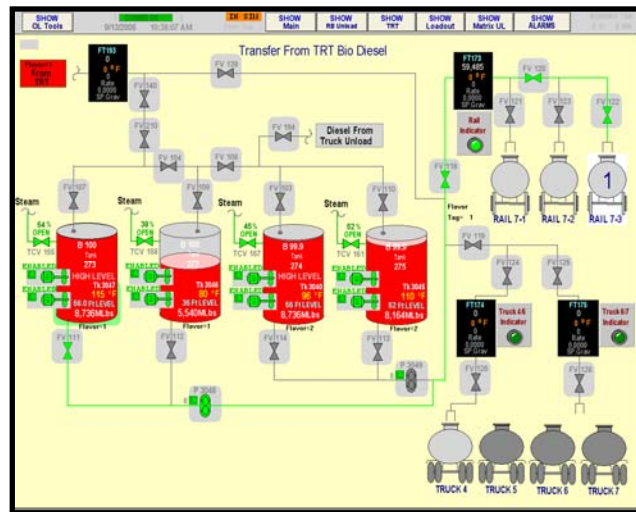
- Liquid and dry bulk ingredient receiving, storage, unloading and loading
- Dairy separation and standardization
- Dry, liquid and specialty ingredient blending and delivery
- Hydration and blending/high and low shear blending systems
- Homogenization
- Starter-culture and fermentation processes
- Heat transfer technologies (HTSTs, plate and frame, tubular, scraped surface)
- Aseptic liquid pasteurization (UHT injection and infusion systems, tubular systems)
- Retort operations
- Pipe, valve and pump networks
- CIP and COP systems
- Bulk and drum sanitation chemical storage and delivery
- Dust and odor collection
- Roasting and frying operations
- Bakery product make-up
- Liquid/liquid separations (decanting, centrifugation, distillation, membrane)
- Liquid/solid separations (decanting, centrifugation, filtration, absorption)
- Specialty gas storage and delivery systems (CO₂, N₂)
- Brine chilling systems
- Slurry drying systems (including spray, filtermat and vibratory dryers)
- Phase 2 and Phase 3 criteria package development and bidder services
- PHA/NFPA audit and studies



Systems Engineering – Automation

Automation

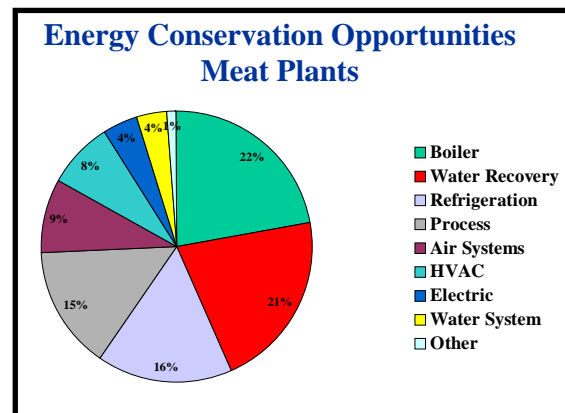
- PLC/HMI programming and development
- Software definition
- Network architecture
- Electrical design
 - PLC elementary drawings
 - MCC specifications
 - Vendor equipment interfacing
 - Instrument specification
 - Control panel design
- Start-up and commissioning
- Reporting: batch, usage, CIP
- CIP definition & programming
- Remote troubleshooting



Systems Engineering - Utilities

Electrical

- Medium voltage distribution – greater than 600V
- Low voltage distribution – less than 600V
- Fault current analysis/Coordination Studies
- Lighting system
- Branch circuitry
- Telephone and data systems
- Ancillary systems
- Standby power generation
- Security systems, etc.



Systems Engineering - Utilities

Mechanical

- Building heating and ventilation
- Special process area HVAC systems
- DDC or PLC HVAC controls
- Natural gas
- Hydraulic systems
- Chilled water
- Heating/hot water
- Steam system
- Exhaust systems
- Back-up fuel
- Special laboratory utility systems



Plumbing

- Domestic water supply system to include high-pressure or high-temperature hot water.
- Sanitary waste and vent system – process waste, high-chemical waste, special materials, hub drains, lift stations, etc.
- Stormwater drainage
- Compressed air
- Central bulk chemical feed systems
- Central bulk ingredient supply systems

Fire Protection

- High-hazard areas
- In-rack sprinklers
- Fire hose systems
- Double interlock & pre-action systems
- Fire pump systems



Refrigeration

- To 7,000 tons
- Single & multi-stage systems
- -45°F to +40°F
- Chilled water system
- Glycol systems
- Critical process AHU's for refrigerated areas
- Condensation control in refrigerated areas
- Sanitation purge systems
- Energy conservation
- Refrigeration capacity analysis

Systems Engineering – EH&S

Environmental

- Pollution Prevention
- Wastewater
- Air Pollution
- Industrial Stormwater
- Waste Management
- SARA Title III
- Planning for Risk Management
- Spill Prevention and Control
- Underground Storage Tanks
- Phase I Environmental Assessments



Health & Safety

- Hazard Communication
- Emergency Response and Action Planning
- Personal Protective Equipment
- Lock-Out/Tag-Out
- Confined Space Entry
- Respiratory Protection
- Powered Industrial Trucks
- Hearing Conservation

Cost Estimating

The Hixson Cost Estimating team is responsible for identifying and tracking project costs. With certified cost estimators/registered professional engineers on staff, the group also uses industry resources and a national network of contacts to ensure the accuracy and validity of labor and materials costs for project budgets.

Construction Administration

The Hixson Construction Administration group acts as the client's watchdog throughout the bidding and construction phases of a project. Comprised of members with architecture, engineering and construction backgrounds, the group provides unbiased technical knowledge and a thorough understanding of how to work with contractors and suppliers to help clients make sound decisions and achieve their end-goals.