RE:BUILD
MANUFACTURING

COMPANY OVERVIEW

RE:BUILD
MANUFACTURING




ANSWER ENGINEERING · AppliedLogix · BATTERY SOLUTIONS · CADONIX · CDi · COMPOSITE RESOURCES
DAPR · fikst · OPTIMATION · ORIBI · tekna.

Across the United States, we are growing a family of engineering and manufacturing businesses whose combined experience creates an industrial powerhouse that is greater than the sum of its parts. Our expertise in operations management, product manufacturing, technical, engineering, and product lifecycle management is changing the way industrial America does business. Close collaboration yields more value for the good of all–our customers, our employees, and the community–for the long term.

Why Re:Build?

Re:Build offers customers a new model of American industrialization. We have a unique combination of manufacturing operations and engineering capabilities that enable customers to grow a local, robust, competitive business. These capabilities will evolve and strengthen through our ongoing deployment of continuous improvement methodologies, the use of proprietary software and digital tools, and intense collaboration within the Re:Build ecosystem. While we frequently provide full product life-cycle management, from concept development to manufacturing implementation, we will also support customers at any discrete point in their journey to productization. As we like to say, “Brain to Box™” or anywhere in between.

INDUSTRIES SERVED:

- Aerospace & Defense
- Cleantech
- Health
- Industrial Equipment
- Mobility

LOCATION:

161 Worcester Road
Suite 606
Framingham, MA 01701

CONTACT:

info@rebuildmanufacturing.com
774.777.5276

LEARN MORE:

SCAN ME

Core Competencies:

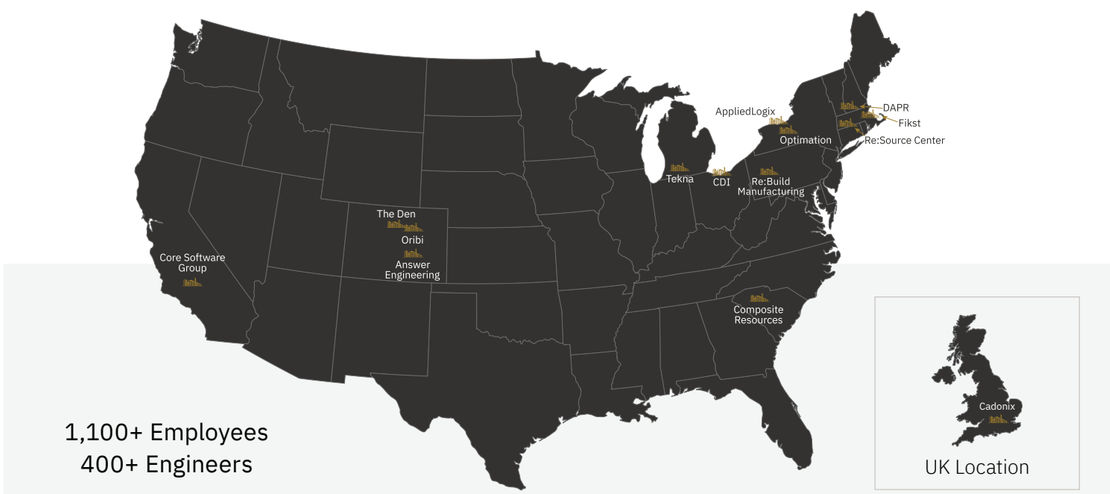
- Industrial, Consumer, and Medical Product Development
- Branding and Product Positioning
- Prototyping
- Software, IoT, AI, and Machine Learning
- Structural Design and Analysis
- Microfluidic, Millifluidic, and Fluidic Design
- Custom Automation and Process Optimization
- Systems Integration
- Embedded Systems
- Electrification and Battery Technology
- Thermoset and Thermoplastic Composites
- Machining
- Precision Metal Fabrication
- Supply Chain Management
- Manufacturing Facility Design and Construction
- Wire Harness Design and Manufacturing

Highlighted Customers:

- 3M
- 6K
- Airbus
- Antora Energy
- Bell
- Bissell
- Boeing
- Boom Supersonic
- Carestream Health
- Collins
- Desktop Metal
- Eastman Kodak
- Elroy Air
- FlaskWorks
- Flexomics
- Form Energy
- Fujifilm Dimatix
- General Electric
- Ginko Bioworks
- Icon Aircraft
- Kifaru
- KitchenAid
- Nanopath
- Newell Brands
- Sage Science
- Sight Diagnostics
- Sikorsky
- Stryker
- Ultralife Batteries
- Virgin Galactic
- Whirlpool
- Xwing

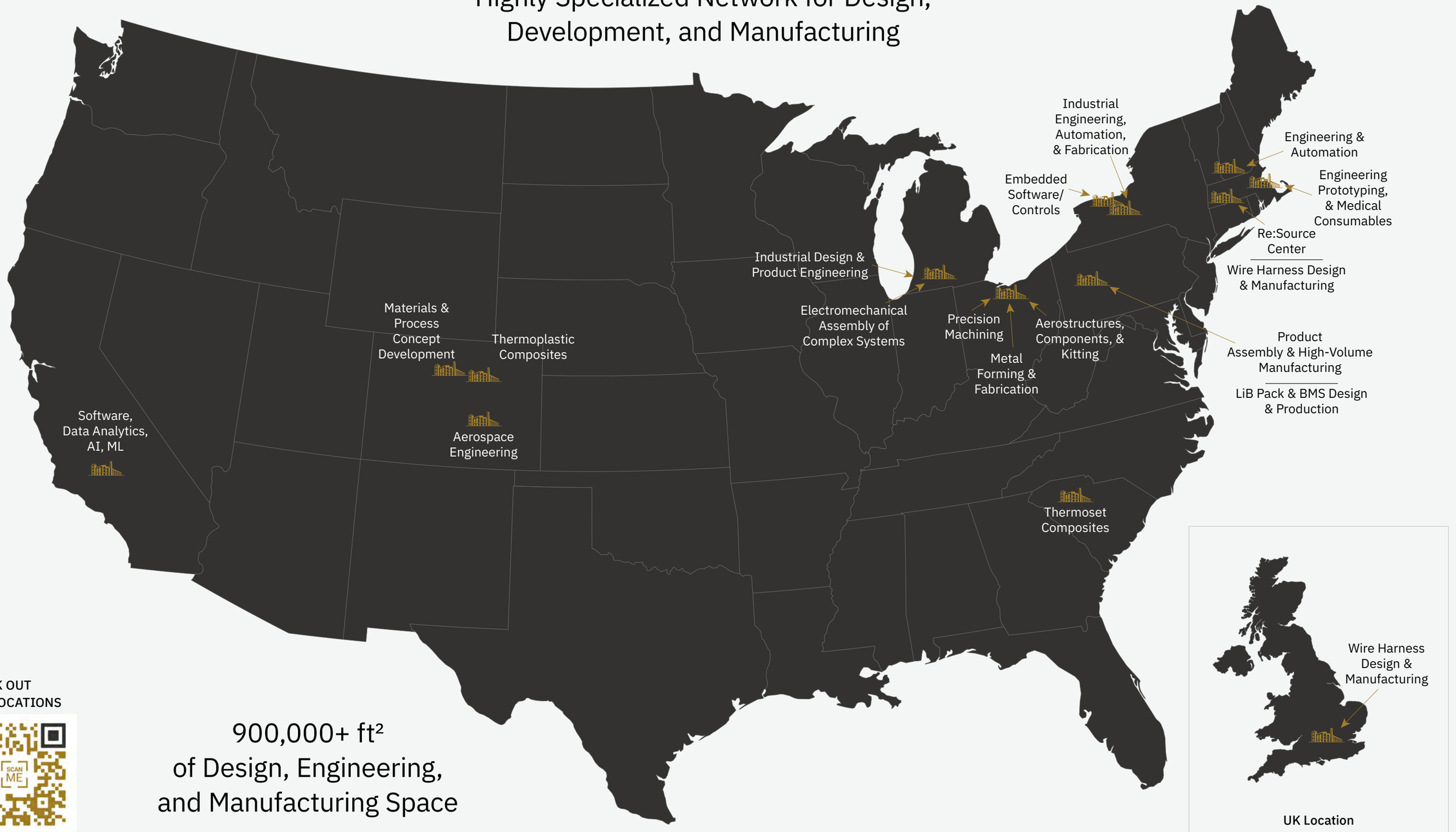
Re:Build’s Footprint:

Customers rely on us for the technical expertise and problem-solving abilities of our over 1,100 employees located at sites across the United States.



1,100+ Employees
400+ Engineers

Highly Specialized Network for Design, Development, and Manufacturing



CHECK OUT OUR LOCATIONS

900,000+ ft²
of Design, Engineering, and Manufacturing Space

UK Location

THE RE:BUILD WAY

Our Moral Compass

The Re:Build Way is a list of 16 principles that sums up our values and describes what makes us different from other manufacturers in the markets we serve. It is the foundation of the company and our true north, guiding us to always do the right thing for all our stakeholders.

01

We care about our team members and put their safety before anything else.

02

Machiavelli was wrong! Winning at all costs is not winning at all. At Re:Build we want to be as proud of the path taken as the result achieved.

03

We recognize diversity as a source of value. We welcome and respect people from all walks of life. We encourage constructive dissent.

04

We protect the environment and devote significant resources to science-based sustainability programs.

05

We listen carefully and non-defensively to one another, customers, suppliers, and community members.

06

We are honest in all our dealings and seek mutually beneficial arrangements. We do not partake in zero-sum behaviors.

07

We are open in our communications, accountable for our actions, reject corrupt behaviors, and expect the same of other stakeholders.

08

We buy businesses to build them over the long-term. We do not buy businesses with a plan to sell them.

09

We seek to improve the communities where Re:Build operates with a focus on apprentice programs and STEM education.

10

We use rigorous systems to ensure we hire and onboard team members who will be successful team members long term.

11

We provide long-term, meaningful opportunities for our team members to maximize both their contribution to Re:Build and their earning potential.

12

We provide forums for team members to share their knowledge and experience and refine their mental models. Re:Build is a learning organization.

13

We celebrate individual achievements but reserve the greatest accolades for team performance. The best ideas and solutions are rarely the product of a person working in isolation.

14

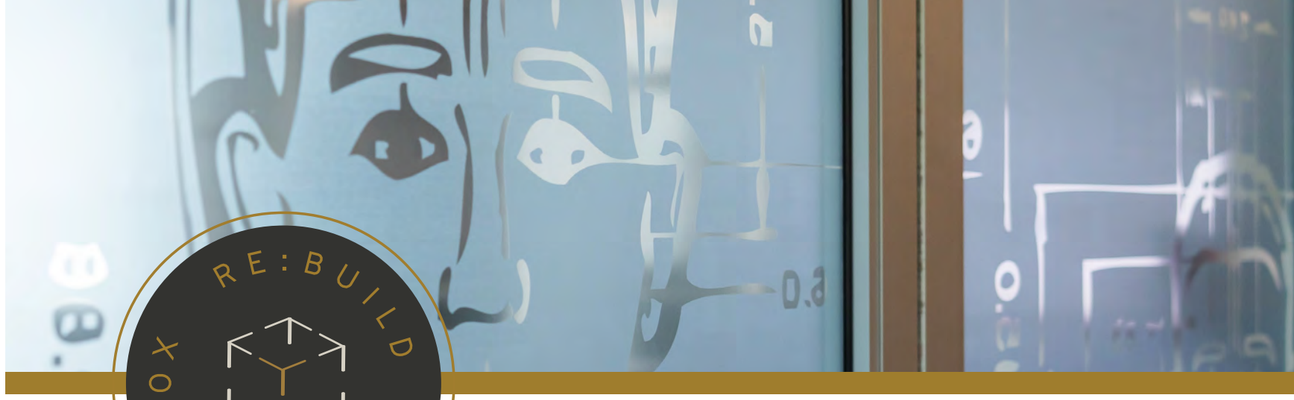
We focus on and measure inputs we control and expect excellent performance on input metrics to create long-term value.

15

We utilize Lean and continuous improvement as we strive for zero defects, lower cycle times, and minimal waste. We design quality into our products and systems.

16

We implement systems to ensure improvements last and identify and reward champions who propagate them across the company.



BRAIN TO BOX™

Reimagining Manufacturing in America

Re:Build develops and manufactures technologically advanced products from concept through production at scale here in the United States using a Brain to Box™ process.

Specialized engineering firms often lack a manufacturing footprint, supply chain capabilities, or commercialization experience. ODMs and traditional CMs lack the front-end ability to translate market data into meaningful product concepts. Further, without scale or long-term manufacturing commitments, they are unwilling to dedicate the vital engineering capabilities (hardware, software, and process) necessary to solve challenging problems and develop technologies. Re:Build has overcome those obstacles by integrating compatible organizations, helping them thrive, and enabling customers to take their idea from inception to commercial production efficiently and effectively.

Re:Build's Brain to Box™ approach has six phases. Customers either participate in all six or a plan is tailored to meet their needs.

1. PLANNING & ALIGNMENT

Projects are launched after consensus on objectives, strategies, and a detailed road map for the commercialization of products, services, and technologies.

2. DISCOVERY & CONCEPT

Ideas and insights are promptly translated into a mock-up. Detailed development requirements mitigate risk in engineering and prototyping.

3. DESIGN & DEVELOPMENT

Re:Build employs an iterative process in engineering and design for manufacturing (DFM), which is fundamental to our lean methodology.

4. PROCESS VERIFICATION & VALIDATION

The appropriate materials, process, and manufacturing operations are developed so you can focus on your customers and scale. Customers are confident the right product is built correctly.

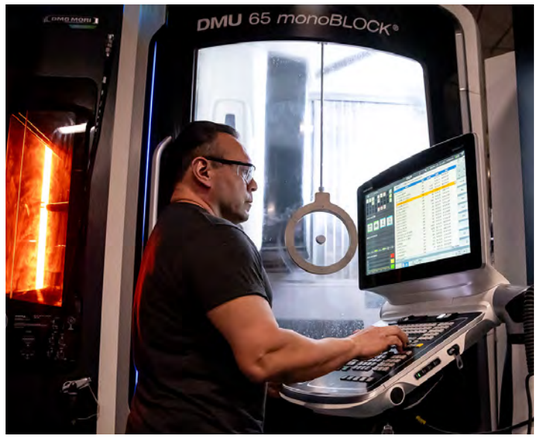
5. PRODUCT VERIFICATION & VALIDATION

High-quality final products meet the necessary requirements for safety, reliability, and ease of use.

6. MANUFACTURING & SUPPORT

After a new product is brought to life, smooth delivery is facilitated by skillful supply chain management, assembly, warehousing, and distribution capabilities.

OUR SOLUTIONS



COMPONENT PRODUCTION

High Performance Components and Structures

Our materials and process capabilities enable us to develop optimized, advanced composite components that give our customers a competitive advantage. We combine proprietary automation and digital tools with traditional composite manufacturing methods to provide design and engineering, rapid prototyping, and high-rate-serial production for complex critical components.

Key Capabilities:

- **Composites**
  - Structural Design, Engineering, and Testing
  - Tooling Design and Production
  - High-Volume Processes
- **Metallic Components and Structure**
  - CNC Machining, Milling, and Turning
  - Hydroforming and Hot Forming
  - Kitting
- **Engineering and Prototyping**
  - Materials Science and Application
  - Prototyping Short Runs and Small-Batch
  - Supply Chain
  - Responsive and Scalable
- **Quality**
  - Exceptional Quality Standards
  - Continuous Improvement
  - Certification for Various Industries

INDUSTRIES SERVED:

- Aerospace & Defense
- Cleantech
- Health
- Industrial Equipment
- Mobility

CERTIFICATIONS:

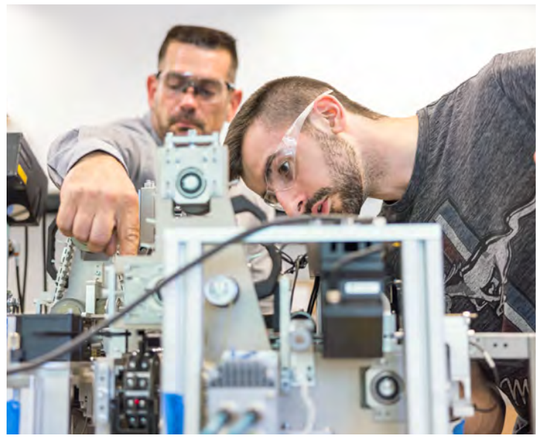
- AS9100D certified
- Class 8 clean room
- IS9001 certified
- ITAR compliant
- NIST 800-171 Compliant
- DFARS Compliant

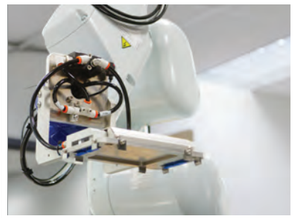
Certifications are site specific.

CONTACT:

info@rebuildmanufacturing.com

LEARN MORE:





INDUSTRIAL AUTOMATION

Optimization for Efficiency and Growth

Re:Build's engineers are experts in manufacturing optimization. We develop customized automation solutions, from semiautomated work cells to a fully automated factory lines, that improve production efficiencies and reduce costs. Automation enables you to remove simpler tasks from the workflow and ensures your skilled employees have a greater impact by adding more value to the product.

Key Capabilities:

- **Custom Automation**
  - Turnkey Build and Integration
  - Prototyping, Testing, and Evaluation
  - Iterative Improvement
- **Systems Engineering and Integration**
  - Custom Automation
  - Robotics Development and Integration
  - Vision Systems and Sensing
- **Process Assessment and Optimization**
  - Line Assessments
  - Decisions Backed by Data
- **Digitization**
  - Data Management and Analytics
  - Full Stack Software Development
  - Machine Learning and AI
- **Industrial Maintenance and Support**
  - Maintenance and Repairs
  - Cleaning and Lubrication
  - Testing and Diagnostics

INDUSTRIES SERVED:

- Aerospace & Defense
- Cleantech
- Health
- Industrial Equipment
- Mobility

CONTACT:

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LEARN MORE:

PRODUCT INNOVATION

From Innovation to Realization

Re:Build turns innovative ideas into realized opportunities. Our research, design, engineering, and branding strategies and tactics are developed with the intention to commercialize new products. We solve previously unsolvable problems, embracing our “fail fast” mentality and moving forward quickly with a robust plan for each prototype, design, and test. This process produces products, brands, and consumer experiences with meaningful impact and greater value.

Key Capabilities:

- **Engineering and Technology Development**
  - Technology Development
  - Design for Manufacturing
- **Product Design**
  - Industrial Design
  - Concept Development
  - New Product Introduction
- **Software**
  - Embedded Software
  - UX/UI
  - IoT
- **Research and Strategy**
  - Trend Analysis and Technology Derisking
  - Defining the Customer’s Problem
  - Portfolio Planning
- **Brand and Visualization**
  - Brand Development
  - Brand Identity
  - Concept Visualization

INDUSTRIES SERVED:

- Aerospace & Defense
- Cleantech
- Health
- Industrial Equipment
- Mobility

CONTACT:

info@rebuildmanufacturing.com

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SCAN ME

SYSTEMS PRODUCTION

Manufacturing Locally, Scaling Globally

Our goal is to continuously elevate the competitiveness of manufacturing in the United States by delivering production systems that provide the most efficient and advanced processes in service of your vision. Re:Build supplies design and manufacturing engineering services, process technology development, and manufactured products for the purpose of helping you achieve your profit goals and fueling your expansion.

Re:Build’s expertise in manufacturing systems production informs our product concepts and enables us to continually refine our designs and the manufacturing process. Streamlined production results in the manufacture of elegantly constructed, functional, and cost-effective goods.

Key Capabilities:

- **Systems Engineering and Integration**
  - New and Existing Hardware and Software
  - Multidisciplinary Program Management
- **Supply Chain Solutions**
  - Advanced Sourcing and Procurement
  - Diverse Materials and Processes
  - Approved-Supplier Management
- **Production Process Development**
  - Line Planning and Development
  - Process Verification, Validation, and Continuous Improvement
  - Quick-Turnaround Analysis of Manufacturability
- **Assembly and Distribution**
  - Precision Assembly and Kitting
  - Lot Traceability
  - Direct-Ship or Third-Party Logistics
- **Quality Management**
  - Verification, Validation, and Product Development Testing
  - Certifications
  - Regular Audits

INDUSTRIES SERVED:

- Aerospace & Defense
- Cleantech
- Health
- Industrial Equipment
- Mobility

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LEARN MORE:

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HIGHLIGHTED CAPABILITIES

RE:BUILD MANUFACTURING

DIGITAL SOLUTIONS

Smart From the Start: Digitally Enabled Manufacturing Intelligence

At Re:Build, we create digital solutions grounded in real-world experience. As manufacturers first, we understand your pain points as we've shared them ourselves. We have experience overcoming intertwined technical and business problems, and can leverage this expertise and our data-enabled solutions to solve your unique challenges. We build machines and factories with the power to learn for themselves, and can enable your factories from day one with the intelligence required to digitally transform your operations.

Key Capabilities:

- **Data Management and Visualization**
  - Auto-summarize results from production events
  - Custom dashboards and reports for operational metrics and process insights
  - Remote connectivity to industrial equipment
  - Condition-based monitoring and alerting systems
- **Machine Learning and AI**
  - Broad AI/ML expertise (regressions, classification, supervised & unsupervised learning, neural networks)
  - Custom-trained AI models for specialized use cases (3D geometry, vision, natural language processing, LLMs)
- **Industry 4.0**
  - Multi-modal data capture (time-series, visual and infrared images, videos)
  - Robust and extensible manufacturing data exchange architecture
  - Bi-directional data connections for PLCs, CNCs, bench-top test equipment, file records (e.g. Excel, CSV)
- **Advanced IoT Integration**
  - Synchronize automation across diverse platforms (conventional machine controls, lab equipment, IoT-enabled devices)
  - IT/OT convergence with factory edge compute
  - Cloud-based integrations and micro-services for bespoke, ML-powered solutions

INDUSTRIES SERVED:

- Aerospace & Defense
- Cleantech
- Health
- Industrial Equipment
- Mobility

CONTACT:

info@rebuildmanufacturing.com

LEARN MORE:

Scan the QR code to learn more about how our solutions can help you improve your operations.

PROJECT PROFILES

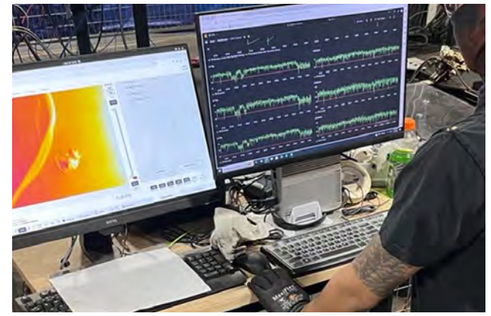
Reduce Scrap with a Lean Factory:

The Challenge
A composite manufacturer had challenges with high scrap rates on some products and, despite having a factory full of automated equipment, didn't have the data or the analytical expertise to trace bad parts and identify the root cause.

The Solution
Re:Build Digital created a Learning Factory platform that brought universal telemetry, full value stream traceability, and rich production analytics without extensive hardware upgrades or PLC program modifications.

- Modern data collection system, supporting 1 million measurements per hour
- Automated serialization, enabling a digital thread from layup through to final QA/QC
- Engineer-centric analytics highlight each bad part and facilitate root-cause analysis
- Predictive maintenance module sends alarms before performance drops can affect quality

The Result
The Learning Factory platform has sustainably improved process yield – on one product, reducing scrap from 50% to under 10%. Equipment reliability also improved, with unidentified failures on ovens dropping from twice per month to never.



SOLUTIONS

Serialization, Process Intelligence, IoT, Predictive Maintenance, Discrete Manufacturing

VALUE DELIVERED:

Reduced Scrap and Rework Labor, Enabled Revenue Opportunities with Improved Product Quality, Reduced Downtime, Improved Asset Efficiency

Improve Production Throughput with Industry-4.0 Automation:

The Challenge:
A battery pack manufacturer struggled with the labor-intensive process of inspecting and testing each battery cell before it was used in a pack – a process that makes up 47% of the total build time. Automating this process is challenging, as battery testing equipment cannot interface with typical robotics and machine control systems.

The Solution:
Re:Build Digital partnered with the client to build an automated battery cell test station, using Industry-4.0 technologies to seamlessly orchestrate robot movement with visual cell inspection and electrical testing in one system.

- Fully automated system moves cells to each station – operator loads cells and hits "start"
- Integrated edge computer automatically configures and runs each electrical test
- Electrical test results (voltage and internal resistance), top and bottom inspection images, and manufacturer data for each cell are stored in a single database

The Result:
Total time to inspect and test battery cells was reduced by almost 80%, decreasing the total time to construct a battery pack from 170 minutes to only 90 minutes. In addition, manual data entry errors were eliminated by fully-automating the data collection process.

SOLUTIONS

Traceable Process Intelligence, Vision System, Edge Computation, Pick-and-place, Advanced Custom IoT Integration, Traceable Supplier Quality Records

VALUE DELIVERED:

Increased Production Throughout, Decreased Manual Labor, Improved First Pass Quality, Build IP with Digital Thread

RE:BUILD
MANUFACTURING

SOFTWARE SOLUTIONS

Your Success, Our Priority – Unleashing Market Potential with Purpose-Built Software Applications

At Re:Build Core Software Group, we are problem solvers. We thrive on understanding the intricacies of your business to craft software solutions with measurable value. Our client-centric approach enhances your operational efficiency and drives tangible results.

Software multiplies the effectiveness of people, processes, and equipment. We are committed to delivering innovative, agile, and transformative technology that integrates seamlessly into your systems and aligns with your business goals

INDUSTRIES SERVED:

- Aerospace & Defense
- Cleantech
- Health
- Industrial Equipment
- Mobility

LOCATIONS:

600 Wilshire Boulevard,
Suite 1700
Los Angeles, CA 90017

CONTACT:

software@rebuildmanufacturing.com

Key Strengths:

Comprehensive Service Portfolio:
From websites, databases, and APIs, to product innovation and desktop and mobile apps, we cover the entire spectrum of software development services to address diverse business needs.

Industry Synergy:
As part of Re:Build Manufacturing, we have a unique perspective on the intersection of technology and industry, offering insights that go beyond traditional software development.

Experienced Leadership:
Our leadership team's many years of collaborative experience ensure a deep understanding of the nuances of the manufacturing industry and clients' expectations.

Agile Methodology:
We prioritize flexibility and responsiveness, which allows us to navigate with ease the changing landscape of technology.

Core Competencies:

- **Full-Stack Development:**
  - Proficiency in both front-end and back-end technologies
  - Experience with popular frameworks and libraries
- **Mobile App Development:**
  - Expertise in iOS and Android development
  - Knowledge of cross-platform development tools and frameworks
- **Web Development:**
  - Mastery of modern web technologies (HTML5, CSS3, JavaScript)
  - Expertise in popular web frameworks and libraries
- **Custom Software Development:**
  - Tailored solutions to meet client needs
  - Creation of scalable and modular software architectures
- **Cloud Computing:**
  - Proficiency in cloud platforms (AWS, Azure, Google Cloud)
  - Deployment and management of cloud-based applications
- **Microservices Architecture:**
  - Design and development of scalable microservices
  - Implementation of communication protocols between microservices
- **DevOps and Continuous Integration/ Continuous Deployment (CI/CD):**
  - Implementation of CI/CD pipelines for efficient software delivery
  - Expertise in DevOps tools and practices
- **Data Management and Analytics:**
  - Database design and optimization
  - Integration of analytics and business intelligence tools
- **Security and Compliance:**
  - Implementation of robust security measures in software development
  - Compliance with industry and regulatory standards
- **API Development:**
  - Design and building of robust APIs
  - Integration of third-party APIs into existing systems
- **Agile Methodology:**
  - Embrace Agile and Scrum methodologies
  - Iterative development and rapid prototyping
- **UI/UX Design:**
  - Creation of intuitive and visually appealing user interfaces
  - User experience optimization that delights customers
- **Machine Learning and AI Integration:**
  - Incorporation of machine learning algorithms into software solutions
  - Integrating AI services for enhanced functionality
- **QA and Testing:**
  - Implementation of rigorous testing methodologies
  - Provision of automated testing for efficiency and reliability
- **US-Based and ITAR Compliant:**
  - Headquartered in the United States
  - Adherence to International Traffic in Arms Regulations (ITAR) for the secure handling of defense-related information

INDUSTRIES WE SERVE

AEROSPACE & DEFENSE

Delivering Performance When it Matters Most

Re:Build provides consistently reliable components and systems for mission-critical aerospace and defense programs. For more than thirty years, we have succeeded in finding the best, safest solutions for a wide range of applications, from large commercial aircraft and unmanned systems to protective equipment for soldiers.

Key Capabilities:

- Design, Develop, and Manufacture Manned and Unmanned Aircraft
- Systems Software Development
- Composite Structures and Mechanical Systems
- Compliance and Requirements Development
- Aircraft Modifications, Repair, and Serviceability
- Systems Analysis and Requirements Development
- Structural Design, Composite Materials Processing, and Configuration Development
- Sheet Metal, Hot Form Titanium, Aero Thermoplastics, and 3 and 5-Axis Machine Metallics
- Automated Production Systems
- Design and Manufacture of Soldier Protective Equipment
- Fabrication of Metallic Composite Components and Assemblies
- Electrical Systems and Board-Level Design, Firmware and Software
- Defense-Grade FPGAs for Imaging Controls and Communications

SEGMENTS WE SERVE:

- Commercial Aircraft
- Defense Equipment
- Law Enforcement
- Missile / Weapon Systems
- Spacecraft
- SATCOM
- UAM

CERTIFICATIONS & ACCREDITATIONS:

- Certification for flight-critical applications
- DLA-Approved Supplier
- AS9100D
- ITAR Compliant
- Boeing Premier Bidder
- NADCAP accreditation scheduled for completion in 2025
- ISO9001:2015
- NIST 800-171 Compliant
- DFARS Compliant

Certifications and accreditations are site specific.

CONTACT:

info@rebuildmanufacturing.com

Why Re:Build?

Collaboration among our companies and with our customers is key to our success in rekindling American manufacturing. Re:Build Manufacturing is comprised of highly specialized, intensely collaborative companies that have the capability to take a product from concept to completion, without compromising quality, affordability, or ethics. This strategy enables us to become an extension of your team, which enhances the overall collaborative experience.

Here are some of the ways we've collaborated with our customers to help them achieve success:

- Designed flight-critical structures for commercial and defense aircraft
- Supported emerging urban air-mobility customers with quick-turnaround engineering and prototyping
- Provided AS9100D-certified parts to major aerospace and defense OEMs
- Developed the only Sikorsky-authorized Phase Maintenance Kit for the UH-60 Black Hawk

Highlighted Customers:

- A3
- Airbus
- Air Methods
- Archer
- Aurora
- Battelle
- Bell
- Blue Origin
- Boeing
- Bombardier
- Boom
- Cessna
- Collins Aerospace
- Columbia Helicopters
- Electra Aero
- Elroy Air
- Galactic
- Giant Magellan Telescope
- Gulfstream
- Highlands Diversified Services
- Icon
- Lake Shore Cryotronics
- Mitsubishi Corporation
- Pratt & Whitney Dependable Engines
- Safran
- Sierra Nevada Corporation
- Sikorsky
- Sparton
- Virgin Galactic
- XCOR Aerospace

PROJECT HIGHLIGHT: *BLACK HAWK*

The Black Hawk helicopter's high-strength airframes are designed and built for passenger safety, speed, corrosion resistance, and the ability to carry heavy loads, among other important characteristics. Since 1985, Sikorsky has relied on our expertise in engineering, aerodynamics, and manufacturing to deliver the materials required to create a structure that is cost-efficient, durable, and reliable.

LOCATIONS:

- Avon, Ohio
- Boston, Massachusetts
- Denver, Colorado
- Nashua, New Hampshire
- New Kensington, Pennsylvania
- Rochester, New York
- Rock Hill, South Carolina
- Los Angeles, California

LEARN MORE:

SCAN ME

CLEANTECH

Building the Solutions That Will Power Tomorrow

Cleantech is a rapidly-evolving, vast new industry ripe for the development of leading-edge solutions to the complex challenges facing humanity. At Re:Build, we are committed to satisfying the immediate and long-term demand for clean technologies in a variety of applications. Our extensive expertise and thoughtful use of resources guide our development processes with the goal of helping power the future and change the world for the better.

Key Capabilities:

Energy Storage and Battery Technologies:

- Battery Pack Design and Assembly
- Energy Storage System Manufacturing
- Battery Equipment Design and Manufacturing
- BMS Design and Development
- Battery Pack Manufacturing
- Hydrogen Processing and Storage Systems

Renewable Energy:

- Wind Turbine Blade Hardware and Components
- Solar Material Manufacturing Process Design and Fabrication
- State-of-the-Art Solar CZ Crystal Growth System

Electronics and Enclosures:

- Differentiated Battery Enclosures
- Weather Resistant Brackets and Components for Power Grid Applications

Advanced Materials:

- Low Dielectric Structural Components for Signal-Sensitive Applications
- Low Dielectric Radome Structures
- Corrosion and Temperature Resistant Pump Impellers and Pump Vanes
- High Durability Composite Tubes and Arms

Manufacturing and Industrial Solutions:

- Battery Factory Buildouts
- Robot Structures and Frames
- Drone Hardware
- Industrial Automation
- Roll-to-Roll and Precision Film Processing Development

Controls and Monitoring:

- Controls Engineering
- Monitoring
- Diagnostics

SEGMENTS WE SERVE:

- Energy & Power
- Sustainability
- Energy Storage
- Electrification

CERTIFICATION:

- ISO 9001 Certified

Certification is site specific.

LOCATIONS:

- Boston, Massachusetts
- Denver, Colorado
- Kalamazoo, Michigan
- Nashua, New Hampshire
- New Kensington, Pennsylvania
- Rochester, New York

CONTACT:

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Here are some of the ways we've collaborated with our customers to help them achieve success:

- Engineered and built a large-scale additive manufacturing system for GE Renewable Energy
- Designed and built a jet biofuel processing plant for Byogy Renewables
- Developed a scalable system for lithium battery production and assembly
- Designed and developed a solar-powered electric scooter

Highlighted Customers:

- 24M
- AMSC
- Antora
- Battelle
- Byogy Renewables
- Form Energy
- GE
- Heliogen
- Mophie
- Nuvera
- Optivolt Labs
- Shlumberger
- Zeeco

PROJECT HIGHLIGHT:
Jet Fuel From Farm Waste

Byogy Renewables is one of the first producers of a premium-grade full replacement sustainable aviation fuel that, with future regulatory approvals, may not require blending with fossil-based fuel for use in existing aircraft or related fuel infrastructure.
The success of this pilot project has enabled Byogy to forge ahead on the commercialization of its proven technology while the company continues to advance the adoption of fully synthetic fuel.

LEARN MORE:

HEALTH

Improving the Quality of Healthcare

Re:Build's expertise in R&D, laboratory systems and automation, and diagnostic technologies drives new product creation and manufacturing solutions that have a positive impact on the healthcare industry. We build trust by emphasizing the importance of a reliable U.S. supply chain for quality control of healthcare products and services.

Key Capabilities:

- Medical Device Research, Development, and Manufacturing
- Microfluidics Expertise for Analysis, Diagnostics, Cell Manipulation, and Patterning
- Wearable Health Therapies and Diagnostic Technologies
- Robotics and Automation Systems
- Research, Strategy, and UX/UI Design
- Precision and Specialized Consumables
- Capital Instrumentation for Surgical, Dental, and Ophthalmic
- Procedures Diagnostic, Laboratory, and Bioprocessing Equipment
- Digital Health Software and Service Development
- Patient Positioning, Handling, and Mobility Products
- Multimaterial Composites Application and Process Development

SEGMENTS WE SERVE:

- Medical Devices
- Life Sciences
- Pharmaceuticals
- Laboratory & Diagnostics
- Home Health
- Point of Care

CERTIFICATIONS:

- ISO 13485: 2016 Certified
- FDA Registered
- FDA 21 CFR 820 Quality System Regulations
- IEC 60601-1 & 61010 Electrical Standards
- Regular audits with UL and SGS

Certifications are site specific.

LOCATIONS:

- Avon, Ohio
- Boston, Massachusetts
- Denver, Colorado
- Kalamazoo, Michigan
- Los Angeles, California
- Nashua, New Hampshire
- Rochester, New York
- Rock Hill, South Carolina

CONTACT:

info@rebuildmanufacturing.com

Why Re:Build?

Collaboration among our companies and with our customers is key to our success in rekindling American manufacturing. Re:Build Manufacturing is comprised of highly specialized, intensely collaborative companies that have the capability to take a product from concept to completion, without compromising quality, affordability, or ethics. This strategy enables us to become an extension of your team, which enhances the overall collaborative experience.

Here are some of the ways we've collaborated with our customers to help them achieve success:

- Developed human-centric, innovative hospital equipment
- Designed and manufactured the first complete blood count device for point of care
- Provided end-to-end logistics and scale-up for rapid antigen testing
- Designed and manufactured custom wheeled products for use in various care settings

Highlighted Customers:

- Access Vascular
- Alcon
- AstraZeneca
- Bausch + Lomb
- BioMed
- Bristol Myers Squibb
- Carestream
- Columbia Care
- CooperVision
- Eppendorf
- Flexomics
- Fujifilm
- GE
- Ginkgo Bioworks
- IMA Life
- Integra
- Medtronic
- Novo Nordisk
- Ortho-Clinical Diagnostics
- Pfizer
- R+D Custom Automation
- Sage Science
- Sight
- Steris
- Stryker
- ThermoFisher Scientific
- Vapotherm
- Zoetis

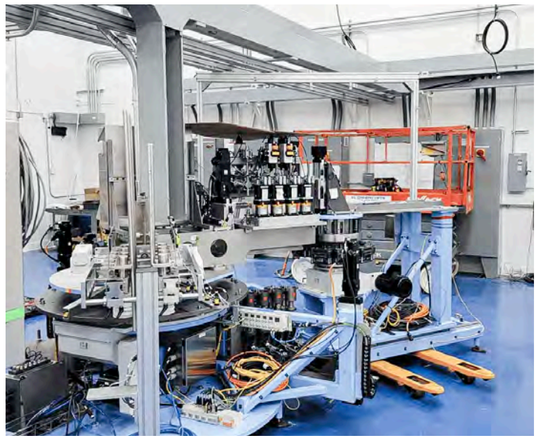
PROJECT HIGHLIGHT:
OLO Sight Diagnostics

OLO is a complete blood count (CBC) analyzer that accelerates time to diagnosis and treatment. OLO provides 5-part diff CBC results with 19 parameters and sophisticated flagging capabilities for on-site testing. It is the first CBC analyzer with FDA 510(k) clearance for blood taken directly from either a finger prick or a venous sample.

- Diagnostic Instrument Design
- Sample Preparation
- Consumable Design

LEARN MORE:

SCAN ME



INDUSTRIAL EQUIPMENT

Revolutionizing Manufacturing

Re:Build specializes in machine design and build, process development, automation, systems integration, and complete factory scale-up for a wide range of industries in the United States. We work with clients to develop and implement practical, efficient manufacturing systems that satisfy their unique requirements.

Key Capabilities:

- Automation and Controls Engineering and Design
- Chemical Engineering
- Electrical Systems Engineering and Fabrication
- Machine Design and Build
- Mechanical Engineering and Design
- Process Engineering and Development

SEGMENTS WE SERVE:

- Automation & Robotics
- Instrumentation
- Factory & Systems Design & Integration

LOCATIONS:

- Avon, Ohio
- Kalamazoo, Michigan
- Los Angeles, California
- Nashua, New Hampshire
- New Kensington, Pennsylvania
- Rochester, New York
- Rock Hill, South Carolina

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Here are some of the ways we've collaborated with our customers to help them achieve success:

- Developed and produced a turnkey coating skid
- Developed biotech systems integration and automation for a COVID-19 testing lab
- Created the software and UI design for bill of materials validation
- Designed and built a 3D printer for a major OEM
- Created the design and integration of an automated metal-extrusion punch press
- Developed custom automation for singulation and materials handling of porous fuel cell layers

Highlighted Customers:

- 6K
- Acronic
- AeroSafe Global
- AKS Cutting Systems
- Brooks
- Chapin
- Crown
- Donaldson Filtration Solutions
- EFI
- FLIR
- Grober Nutrition
- Hitachi
- Kitron
- Eastman Kodak
- Lisk Company
- Markem Imaje
- McGard
- Misco
- Synergy
- Velcro
- Wakefield Thermal

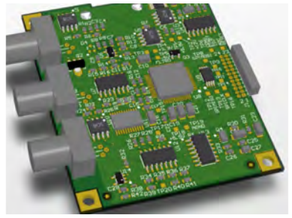
PROJECT HIGHLIGHT:
Automating Commercial Farm Equipment

The customer owns an egg farm and sells to a supermarket chain that expects vendors to deliver superior-quality food. Re:Build was tasked with developing and integrating automation on the farm so that the eggs would never be touched by humans. Our robust, completely automated solution includes a control system, I/O wiring, and web-enabled HMI.

- Control System Update
- I/O Wiring
- Web-Enabled HMI
- Complete Automation

LEARN MORE:

SCAN ME



MOBILITY

Enabling a New Generation of Mobility

Re:Build's expertise in materials processing, electrification, smart systems, and advanced manufacturing is integral to the development of leading-edge, sustainable mobility technology. Whether you're just getting started, ready to scale up, or an established leader, we are able to rapidly identify more opportunities and solutions for you.

Key Capabilities:

- Embedded Software Systems
- Battery Management Systems
- Battery Enclosures
- CPAs (Charge Port Assembly)
- Structural Components
- Engineering Design
- Prototypes Through Large Scale Production
- Battery Pack Assembly and Testing
- Durability and Safety
- Manufacture of Safety-Critical Components – Landing Gear, Blades, etc.
- Cost Effective, Advanced Thermoplastic Wheels
- Tubular and Frame Solutions

SEGMENTS WE SERVE:

- Automotive & Electric Vehicles
- Marine & Recreational Vehicles
- Urban Air Mobility
- Micromobility

LOCATIONS:

- Avon, Ohio
- Denver, Colorado
- Kalamazoo, Michigan
- Nashua, New Hampshire
- New Kensington, Pennsylvania
- Rochester, New York
- Rock Hill, South Carolina

CONTACT:

info@rebuildmanufacturing.com

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Here are some of the ways we've collaborated with our customers to help them achieve success:

- Developed a hydraulic-hose pressure test system
- Designed a driveshaft torsion test system
- Designed a composite airframe for an unmanned aircraft
- Developed lightweight fire-resistant battery boxes
- Developed low-cost, high-production-rate rotor blades
- Customized an automation process for fuel cell manufacturing

Highlighted Customers:

- Bennington
- Elroy Air
- Invacare
- ITC
- Optivolt Labs
- Packard Performance
- Polaris
- Pure Watercraft
- THK

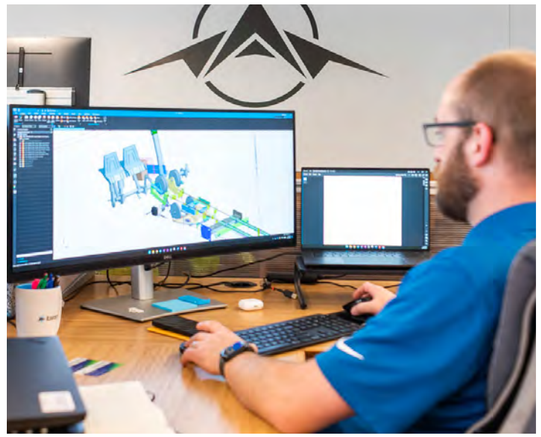
PROJECT HIGHLIGHT:

AC/DC Power Supply Embedded Design

This project involved the development of a compact, high-efficiency AC/DC power supply with dual USB Type-C outputs was developed to meet the needs of an electric mobility start-up. This project addressed stringent size, efficiency, and safety requirements, by leveraging advanced power conversion, sophisticated packaging, and regulatory compliance. The resulting solution featured five optimized PCBs and a custom USB Power Delivery protocol stack, ensuring compliance with relevant safety standards. The project was delivered on schedule, seamlessly integrating with the client's product development timeline.

FIND OUT MORE:

COMPANY OVERVIEWS



Structural, Fluidic and Aerodynamic Design, Analysis, Prototyping, and Testing Services

Re:Build Answer Engineering is an aviation and aerospace engineering firm. We provide design, development, engineering, analysis, testing and certification services for the aerospace, urban air mobility, and space industries. Our world-class team of engineers and designers partner with the most innovative brands in all disciplines of aerospace to solve complex design and analysis problems, and to create products and systems optimized for manufacturing. In addition to engineering and design services, we collaborate within Re:Build to support our customers throughout the product life cycle, including component and systems manufacturing and factory-wide automation solutions.

INDUSTRIES SERVED:

- Aerospace & Defense
- Mobility

LOCATIONS:

24 Inverness Place East
Suite 200
Englewood, CO 80112

CONTACT:

info@rebuildmanufacturing.com

Core Competencies:

- Aircraft Development
- Computer-Aided Design using Catia, Creo, NX, and SolidWorks
- Initial Structural Sizing and Layouts
- Structural Detail Design and Analysis
- Finite Element Analysis
- Composite Materials Design and Manufacturing
- Mechanical Systems Design
- Component Level Testing
- Program Management
- FAA 14 CFR Part 23, 25, 27, 29, and 400 Certification

Key Differentiators:

Re:Build Answer Engineering has extensive experience with new concept-aircraft development on both manned and unmanned aircraft and spacecraft platforms. We work in the major fields of aircraft-engineering disciplines, including structures, mechanical systems, environmental control systems, aerodynamics, aircraft modifications, repairs, and serviceability. Our specialties include airframe structural design and analysis, composite materials and processing, configuration development, systems installations, and compliance or requirements development. Our engineers integrate seamlessly into a customer's engineering team, immersing themselves in the project and ensuring success and customer satisfaction.

Highlighted Customers:

- Airbus
- Aurora Flight Sciences
- Boom Supersonic
- Cirrus
- Electra Aero
- Elroy Air
- Icon Aircraft
- Raytheon
- Scaled Composites
- Sierra Nevada
- Stratolaunch
- United Rotorcraft
- Virgin Galactic
- Xwing

CERTIFICATIONS:

- Primary NAICS Code: 541330 Engineering Design
- CAGE Code: 7NE00
- DUNS: 079120109

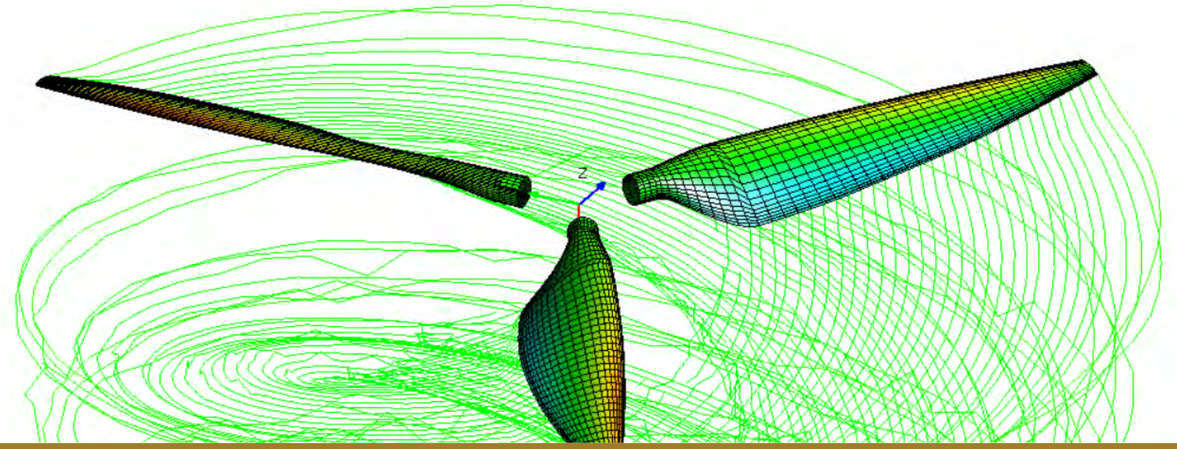
LEARN MORE:

SCAN ME

Advancing Propeller and Rotor Innovation

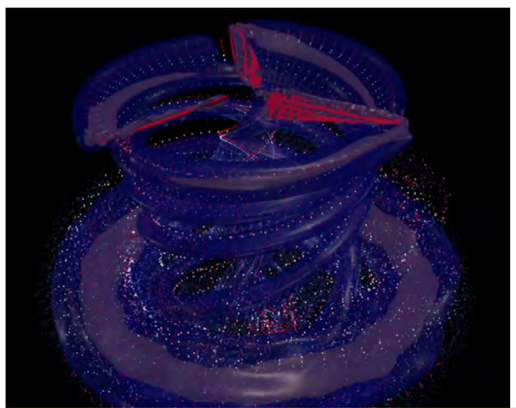
Industrial Manufacturing

Re:Build Answer Engineering has extensive capabilities in the design, analysis, fabrication, and testing of flight vehicle propellers and rotors.



Challenges

Developing flight vehicle propellers and rotors that meet specific operating requirements, while navigating the complexities introduced by advanced configurations such as eVTOL aircraft with distributed propulsion units, is a significant challenge. The requirements include optimizing blade design for various operating conditions and ensuring structural integrity and performance through comprehensive analysis and testing.



Solutions

Re:Build Answer Engineering has developed a unique combination of digital tools to analyze the aeroelastic behavior of rotors in combination with their supporting structures to address these challenges.

They can analyze the performance of those blades using several tools of increasing complexity, from simple blade momentum theory through full Navier-Stokes computational fluid dynamics, with blades operating in hover through forward flight conditions. Their unique digital tools analyze the aeroelastic behavior of rotors with supporting structures, essential for modern eVTOL configurations. In the design phase, they rapidly fabricate prototype blades, including adjustable pitch blades made from composite materials. They conduct thorough structural and aerodynamic performance testing at their facilities and support customer testing. Additionally, they have the capability to use CNC machining, hand finishing, and static balancing to meet specific customer needs.

Value Delivered

Re:Build Answer Engineering provides tailored solutions for custom propeller design needs, applying advanced aerodynamic design, computational fluid dynamics (CFD) analysis, structural analysis, finite element analysis (FEA), vibration dynamics analysis, and aeroelastic analysis. This comprehensive approach ensures optimized performance and structural integrity of propellers and rotors, addressing both conventional and cutting-edge aviation requirements.

INDUSTRIES:

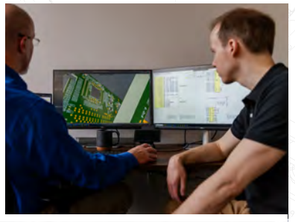
- Consumer Products
- Mobility
- Aerospace & Defense

SERVICES:

- Engineering
- Analysis

APPLICATIONS:

- Conceptual Design
- Prototyping
- Testing
- Fabrication & Assembly



Embedded Systems Design and Commercialization Services

Re:Build AppliedLogix provides product OEMs with leading-edge embedded systems design services and commercialization expertise. We have a senior team of electronics, software, and mechanical engineers with an average of 29 years of experience. We work across many industries, application domains, and technologies including fuel-cell-control and battery-management systems, precision agriculture, medical devices, automotive and transportation components, and imaging systems with machine vision and AI processing integration.

INDUSTRIES SERVED:

- Aerospace & Defense
- Cleantech
- Health
- Industrial Equipment
- Mobility

LOCATIONS:

3495 Winton Place, Building C
Suite 2
Rochester, NY 14623

CONTACT:

info@rebuildmanufacturing.com
585.678.1027

Core Competencies:

- Capture and refine product concepts and requirements
- Develop novel, robust architecture specifications product platforms
- Perform leading-edge, custom electronics, software, and mechanical design
- Provide quick turnaround on prototypes for rapid concept ideation
- Facilitate production ramp-up with custom functional test systems, and provide expert guidance for agency approvals
- Deliver production-ready systems optimized for volume manufacturing

Key Differentiators:

Our team of more than fifty senior engineers has a remarkable depth and breadth of technical expertise and a commitment to integrity, teamwork, and value.

The Re:Build AppliedLogix team is structured to tackle the multidisciplinary aspects of digital product development. The range includes custom analog and digital embedded electronics and fully integrated subsystems, embedded software on bare metal, RTOS or Linux (as appropriate for the application), full-stack application development (Linux & Windows), packaging for embedded systems, mechanical systems, tooling design and manufacturing process development, cost-effective, rapid prototyping, and more.

Skills and Technologies:

- Embedded Controllers
- Digital Signal Processing
- Image Processing
- Control Algorithms (PID, Motor, Motion)
- Sensor Integration
- Data Acquisition
- Operating Systems (Embedded Linux, FreeRTOS, MQX / QNX)
- C / C++ / C#
- FPGA Development
- High-Speed Digital Circuit Board Design
- DDR3 / DDR4 Memory Subsystems
- Precision Analog Design
- High-Efficiency Power Conversion
- Packaging / Enclosure Design
- Thermal Management and Simulation

LEARN MORE:

SCAN ME

RE:BUILD MANUFACTURING | AppliedLogix
Expert Digital Product Engineering

PROJECT PROFILE

Embedded Monitoring for Grid-Scale Energy Storage

Cleantech

The customer was developing a new grid-scale flow battery and was looking for a low cost, custom stack health monitor.

Image Source: Lockheed Martin

Challenges

The commercially available products contained unnecessary features and functions that drove costs up and didn't contribute any significant performance advantages.

Achieving the desired accuracy while also staying within the production cost constraints proved to be the biggest challenge in implementing this unique cell data acquisition system.

Solutions

Re:Build AppliedLogix specified and developed the portion of this system that monitors the stack health of the flow battery, known as the Stack Health Monitor (SHM).
The SHM aggregates the measured data and reports the statistics to the system controller.

System Overview

The SHM extracts samples of the voltages from each cell within the stack, and communicates the critical parameters to the system controller.

The system provides continuous, real-time monitoring of the flow battery cell voltages, full stack voltage, and conditions, which are aggregated and reported to the high-level system controller.

Re:Build AppliedLogix gathered and documented the customer's input and design requirements, assembled its multi-functional team, and then proceeded to execute the project.

The software was developed in C, under the CMake build system, with unit testing in Ceedling targeting ARM Cortex M3 and Cortex M7 microcontrollers. Re:Build AppliedLogix developed all of the key functions for voltage measurement, self-calibration, CAN communication, interlock logic for fault-based shutdown, open cell connection (wire-break) detection, Modbus-over-TCP control system interface, on-board data logging, an embedded serial console for configuration, testing and debug output, and a TFTP bootloader for firmware updates via Ethernet.

On the hardware side, a distributed system was designed and developed. The hardware is deployed multiple times within a system, allowing flexibility in system size. Critical design aspects included precision analog measurement, digital sampling, self-calibration, signal filtering, and high voltage isolation.

The SHM gathers and assembles the cell data, automatically identifies the number and position of the input modules, provides safety status, supports the high voltage isolation requirements, and hosts system power as a Power over Ethernet (POE) client.

Value Delivered

Internal studies by the customer have shown that the Re:Build AppliedLogix solution outperformed the original commercially available system by a wide margin. The voltage stability and reliability were improved, the operational constraints were eliminated, and a 90% reduction in the unit manufacturing cost (UMC) was achieved.

CAPABILITIES DEMONSTRATED:

- Embedded hardware development
- Embedded software development
- Mechanical packaging design
- High-voltage board design
- Low-noise analog design

KEY DELIVERABLES:

- Product feasibility assessment
- System architecture specification
- Subsystem design, including all circuit simulations and noise floor analysis
- Quick-turn prototype fabrication and assembly
- Custom enclosure design and fabrication
- Delivered full SHM assemblies to the customer for integration

RE:BUILD MANUFACTURING | BATTERY SOLUTIONS

U.S.-Based Battery Engineering and Manufacturing

Re:Build Battery Solutions designs and develops lithium-ion battery (LiB) modules, packs, and battery management systems (BMS) while providing end-to-end solutions for battery manufacturing, including factory design and automation. Using advanced modeling and third-party testing, we ensure our battery packs are durable and high-performing.

Partnering with leading LiB suppliers, we offer flexible supply chain solutions, and our vertically integrated approach eliminates inefficiencies and accelerates innovation. Additionally, we collaborate with clients to secure Department of Energy (DOE) funding for battery production facilities, empowering the growth of U.S.-based battery manufacturing.

INDUSTRIES SERVED:

- Aerospace & Defense
- Mobility
- Energy Storage
- Battery Factories

LOCATIONS:

225 Schreiber Industrial Park,
New Kensington, PA 15068

CONTACT:

info@rebuildmanufacturing.com

Prototype Development:

Re:Build's battery pack prototype assembly lab is a 2,000 sq. ft. facility dedicated to supporting the assembly and testing of high-quality LiB packs up to several kWh in size. We assemble 18650- and 21700-type cylindrical cells via programmable wirebonding and spot welding. Pouch and prismatic cell processing are in development. Re:Build Battery Solutions designs include all typical LiB cell chemistries, including lithium iron phosphate (LFP), nickel manganese cobalt (NMC), and lithium nickel cobalt aluminum oxide (NCA). Our operation can also simultaneously assemble 15 MWh/yr of high-mix battery packs and those with different cell and size requirements. These prototyping operations enable us to turn around custom lithium-ion battery pack prototypes in weeks, rather than months. We have a 16-channel pack tester with fully serialized data collection. The prototype work we conduct gives Re:Build Battery Solutions valuable know-how on the design and layout of high-automation manufacturing lines, which are build to suit customers' pack requirements.

Re:Build Battery Solutions Offers Comprehensive Solutions in BMS, Modules, and Packs

Re:Build's comprehensive approach to battery pack design, development, construction, use, and refurbishment is supported by reliable access to core system components and standard modules. We offer collaborative design, modeling, and analysis, and the assembly, qualification, and testing of prototypes and high-volume packs. We also offer factory design and build.

SCAN ME

LEARN MORE ABOUT OUR CAPABILITIES:

Design & Model → Components → Source Cells → Assembly → Testing → Modules → Packs → Management Systems → Re:Use Re:Cycle

We'll fit in where you need us or work with you across the full development process.

Key Differentiators:

Design & Model

- Power Profile
- Connectivity
- Thermal Management
- Safety and Protection
- Durability
- Data Collection
- Testing Program
- Advanced Structure
- Thermal Analysis

Assembly

- Prototype to High Volume Production
- AI-Driven Quality Control
- Line Automation
- Factory Design and Build

Management System

- Customizable Approach
- Configurable BMS Systems
- Current and Voltage Protection
- Intelligent Cell Balancing
- Data Logging
- State of Charge (SoC)
- State of Health (SoH)
- Rigorous Certification

Our packs are designed with refurbishment and reuse in mind, including the testing and reuse of recovered components, the replacement of degraded components, and the testing and secondary use of retired cells/modules for new applications, thus reducing the cost of cell replacement and offering an alternative to disposal and recycling.

Re:Build's Re:Use Battery Pack Refurbishment Supports a Broader Sustainment Model

MANUFACTURE
Battery pack for primary use

High-Volume Automated Pack Manufacturing

Re:Build

RE:USE
- Premium pack refurbishment
- Includes new cells
- Reuse of valuable pack components
- Complete testing

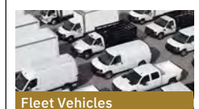
Cell/Module Resale for Secondary Applications

Re:Use

RE:CYCLE
Retire pack after capacity loss

TEST
Cell and module testing and refurbishment


Propulsion


Fleet Vehicles


Microgrid Operations


Stationary Energy Storage


Server UPS

RE:BUILD MANUFACTURING | BATTERY SOLUTIONS

PROJECT PROFILE

Battery Pack Development for Advanced Drone Program

Aerospace & Defense

Defense contractors specializing in aerospace and unmanned systems rely on Re:Build Battery Solutions to deliver advanced battery solutions that power mission-critical drone programs, ensuring operational efficiency and success in demanding environments.

Challenges

The client, a leading defense contractor specializing in aerospace and defense technologies needed a reliable and high-performance battery pack designed specifically for its advanced counter-UAS (unmanned aircraft system) drone program. The battery packs had to meet strict requirements, including optimizing vehicle weight, maximizing flight time, and withstanding the physical demands of launch, flight, and landing. Additionally, the client required components that were sourced from trusted U.S. suppliers to ensure reliability and align with national priorities. Compounding the complexity, the project required adherence to tight program timelines, completing the transition from concept to prototype in just six months to meet mission-critical deadlines.

The Re:Build Battery Solutions team was tasked with:

- Collaborating closely with the client's engineering team to ensure alignment with system specifications.
- Rapidly designing, prototyping, and testing novel battery packs to meet critical mission deadlines.

The team deployed an integrated approach that ensured seamless communication and rapid iterations, while leveraging quick-turn prototyping processes.

Solutions

The team developed and implemented the solution in two phases:

Design Phase: A lightweight and high-performance battery pack was conceptualized to meet energy density, weight, and loading constraints.

Prototyping Phase: Functional prototypes were created and rigorously tested to validate the design under real-world flight conditions.

System Overview

The advanced drone system included:

Battery Configuration: Battery packs optimized for thermal efficiency, weight management, and easy installation.

Performance Enhancements: Systems engineered to endure launch and landing stresses.

Value Delivered

Operational Efficiency: Achieved all performance and durability goals.

Mission Success: Enabled the client to meet critical deadlines, ensuring the project's success.

Strategic Impact: Strengthened domestic supply chains by leveraging U.S.-based manufacturing.

INDUSTRIES:

- Aerospace & Defense

APPLICATIONS:

- Battery Pack Concept & Design
- Prototyping & Performance Testing
- Engineering Services

Wire Harness Design in the Cloud

Arcadia from Re:Build Cadonix shatters the limitations of traditional CAD software. This intuitive, groundbreaking cloud-based platform empowers engineers with a comprehensive suite of tools for automotive electrical design, all accessible from any web browser. No bulky software installations, complex licensing, nor sluggish updates. Arcadia's innovative architecture leverages the cloud for seamless scalability and instant access to the latest features. Create schematics, simulate circuits, design wiring harnesses, and conduct design rule checks and more – all from a web browser, anywhere, anytime. Arcadia streamlines your entire design workflow. From initial concept to final harness production, engineers have everything they need at their fingertips.

INDUSTRIES SERVED:

- Aerospace & Defense
- Health
- Industrial Equipment
- Mobility

LOCATIONS:

161 Worcester Road, Suite 603
Framingham, MA 01701

CONTACT:

info@rebuildmanufacturing.com
+440.845.519.0038

Core Competencies:

- Browser (Cloud) Based Arcadia Wire Harness Design & Manufacture Suite
- Full Lifecycle Toolset for Every Wire Harness Design Stage
- Enterprise Modules for Large OEMs and Tier 1 Manufacturers
- Industry Leading Customer Support
- Powered by Cadonix AWS Cloud Infrastructure
- Schematic Design & Layout
- Harness Design & Formboard Layout
- Simulation & Analysis
- MCAD Integrations
- Documentation & Reporting
- Collaboration & Version Control
- Cost Optimization & Harness Quoting
- API Integration
- Integration with PLM/ERP System
- Smart Testing & Manufacturing
- Parts Services

Key Differentiators:

Re:Build Cadonix revolutionizes design with Arcadia, the innovative cloud-based ECAD platform. We were the first to bring electrical design to the cloud and we're still breaking the rules with a suite of modules that offer unmatched speed and flexibility. Re:Build Cadonix brings a wealth of experience to the table. With a deep understanding of design challenges, we empower engineers with the tools and knowledge to excel. We leverage our expertise to streamline workflows and bring ideas to life faster – all while embracing the human touch, listening to our customers, and helping them to achieve their goals.

Highlighted Customers:

- Altec
- Angloco
- AQ Group
- BF1 Systems
- Bott
- Canadensys
- Diligent Robotics
- Electrex
- Emsco
- Hydrogen Vehicle Systems
- Jankel
- Ellex Medical
- McLaren Automotive
- SAMI
- Tigercat
- Toro
- Transport Design International
- Volta Trucks

LEARN MORE:

SCAN ME

Precision Metallic Components, Advanced Composite Structures, and Integrated Assemblies for Performance-Critical Applications

Re:Build Cutting Dynamics is an award-winning provider of machined and fabricated structural components for the aerospace, defense, and high performance industrial markets. We minimize our customers' costs and supply chain risk by providing a wide range of process capabilities for the design, prototyping and production of high-tolerance metallic and composite structures and hardware assembly and kitting.

INDUSTRIES SERVED:

- Aerospace & Defense
- Cleantech
- Health
- Industrial Equipment
- Mobility

LOCATIONS:

980 Jaycox Road
Avon, OH 44011

35340 Avon Commerce Parkway
Avon, OH 44011

33597 Pin Oak Parkway
Avon Lake, OH 44012

CONTACT:

info@rebuildmanufacturing.com
888.375.1621

Core Competencies:

- Hydroforming
- Precision Metal Fabricating
- Waterjet and Laser Cutting
- 3-, 4-, and 5-Axis CNC Machining
- CNC Turning
- Titanium Hot Forming
- Thermoplastic Composite Compression Molding
- Thermoplastic Composite Stamp Forming
- Structural Assemblies
- Sourcing and Kitting

Key Differentiators:

Re:Build Cutting Dynamics is a diversified, highly capable fabricator and supplier of mission-critical metallic and composite structures with nearly 40 years of experience serving high-performance aerospace, defense, and industrial markets. We provide unmatched value to customers through rapid engagement, DFM feedback on component design, and supply chain and sourcing services. We employ intensive continuous-improvement methodologies, proprietary software, and a wide array of processing methods to optimize component and system performance at the lowest total cost for our customers.

Highlighted Customers:

- Airbus
- Bell
- Bendix
- Boeing
- Navistar
- Sikorsky
- Spartronics

CERTIFICATIONS:

- AS9100D
- ISO9001:2015
- ITAR Compliant
- NIST 800-171 Compliant

LEARN MORE:

SCAN ME

PROJECT PROFILE

Aerospace Kitting Services

Aerospace & Defense

Aerospace and aviation companies rely on the Maintenance Repair and Overhaul (MRO) industry for essential products and services to keep their aircraft operating.

Challenges

Excess inventory, chronic shortages, continuous expediting, lack of change management, material rejections, and high administrative costs are hindering aerospace manufacturers and MRO facilities from optimizing production and causing missed maintenance goals which impacts aircraft availability.
A comprehensive kitting solution was needed to address these challenges, ensuring critical parts availability and a robust parts allocation process to streamline operations to significantly reduce lead times and costs.

Solutions

Re:Build Cutting Dynamics develops customer-specific kits that support highly complex applications such as maintenance retrofitting, MRO, provisioning, forward stocking, and product improvements. These kits, comprised of components suitable for high-volume production, enhance the customer's operational efficiency by lowering inventory, improving readiness, reducing overall costs, minimizing procurement administrative expenses, and streamlining cycle times.

Value Delivered

Kit lead-time was reduced from 190 days to 60 days. The kits contain 100% of required parts leading to no shortages, and requires customer supply organizations to place only one order as opposed to orders for each individual part.

Kit configuration is linked directly to OEM, and are color-coded and packaged by zone for ease of use. They are ordered through the Defense Logistics Agency (DLA) and are shipped directly to customer.

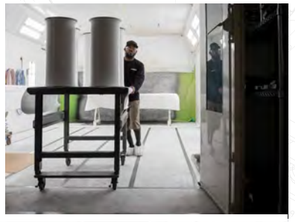
Individual parts are available to support lost or damaged parts.

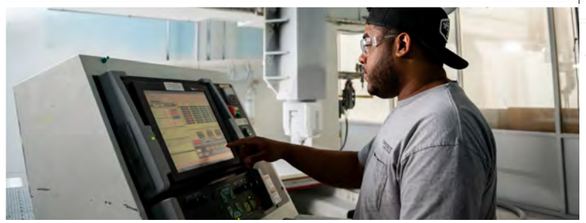
INDUSTRIES:

- Aerospace & Defense
- Commercial Aerospace

APPLICATIONS:

- Black Hawk Maintenance
- MRO Service
- Custom Packaging
- Sequential Packaging
- Commercial Kitting





Composite Components and Assemblies for High-Performance, Mission-Critical Applications

Re:Build Composite Resources develops, prototypes, and manufactures high-performance, advanced thermoset and thermoplastic composite structures and integrated assemblies for customers in the aerospace, defense, and high-specification industrial markets. We have a diverse range of composite manufacturing processes that enable us to support our customers throughout the entire product life cycle, from early-stage low-rate prototyping and testing to full-rate production.

INDUSTRIES SERVED:

- Aerospace & Defense
- Industrial
- Mobility

LOCATIONS:

485 Lakeshore Parkway
Rock Hill, SC 29730

CONTACT:

info@rebuildmanufacturing.com
803.366.9700

Core Competencies:

- Design, Engineering, and Analysis
- Composite Material, Adhesive, and Resin Selection and Qualification
- Tooling Design and Production
- Filament Winding
- Compression Molding
- Lamination
- Roll Wrapping
- Autoclave and Out-of-Autoclave (OOA) Processing
- Honeycomb and Synthetic Cores
- High Temperature Composite Structures
- Structural Bonding and Assembly
- Metallic and Composite Machining
- Program Management

Key Differentiators:

Re:Build Composite Resources' comprehensive, diverse portfolio of composite processing methods provides our customers with an extensive range of component and material options. We are also uniquely positioned to develop low-rate prototypes for testing and qualification and follow through to full-rate production. Customers benefit from Re:Build Manufacturing's engineering expertise and complete design-build capabilities.

Highlighted Customers:

- 3M
- Chemring
- Kratos
- Raytheon

CERTIFICATIONS:

- AS9100D
- ISO9001:2015
- ITAR Compliant
- NIST 800-171 Compliant
- DFARS Compliant

LEARN MORE:

SCAN ME

RE:BUILD MANUFACTURING | COMPOSITE RESOURCES

Composite Sunshields for Ready Service Lockers

Defense

Re:Build Composite Resources is revolutionizing corrosion-resistant solutions for shipboard-ready service lockers. These innovative sunshields are tailored to the unique needs of maritime environments.

Challenges

Shipboard-ready service lockers (RSL) need effective solar protection and minimal maintenance requirements. Traditional RSLs are often powder-coated metals and are prone to rust and corrosion, which requires frequent maintenance .

Solutions

Re:Build Composite Resources developed and rigorously qualified a composite material version that allows for the purchase of thermoplastic composite material sheet stock, enabling the fabrication of sunshields in any desired size or shape. By developing a composite solution, Re:Build Composite Resources provided a solution with increased corrosion resistance, which is critical in maritime environments.

Value Delivered

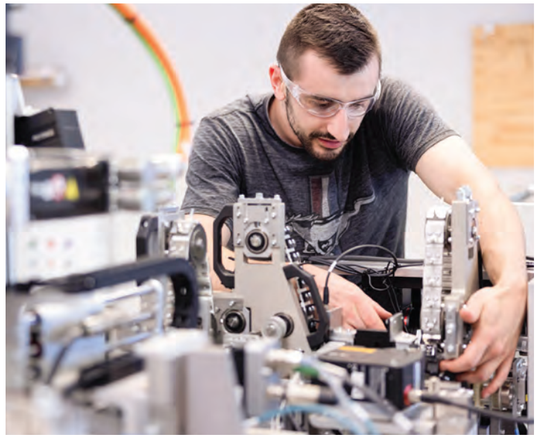
Re:Build Composite Resources developed an RSL using a thermoplastic composite material that is lighter weight, that reduces corrosion-related maintenance, and allows for custom fitting and replacement that is better suited for a marine environment.

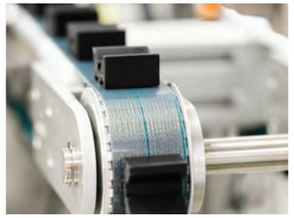
INDUSTRIES:

- Department of Defense
- Ocean Surface Transport
- US Navy
- Coast Guard

APPLICATIONS:

- Form, Fit, & Function
- Reduced Corrosion
- Lighter Weight





Developing Industrial Products and Solutions for Physics-Intensive Challenges

Re:Build DAPR Engineering provides world-class OEM product and process development, engineering, and industrial automation to customers in nearly any industry. Our team is comprised of engineers with experience across a wide range of technical disciplines who are capable of solving complex engineering challenges for performance-critical applications. Through intensive engagement with our customers, we work as partners to provide a variety of engineering solutions affordably and on schedule from our 35,000 square-foot facility in Nashua, New Hampshire. We have successfully delivered on industrial automation projects, FEA/CFD analysis, OEM product development, DMF/DFA analysis, and techno-economic white papers. Throughout a project we support our clients with supply chain qualification and management and rapid design iteration.

INDUSTRIES SERVED:

- Cleantech
- Health
- Industrial Equipment

LOCATIONS:

85 Northwest Boulevard
Nashua, NH 03063

CONTACT:

info@rebuildmanufacturing.com
603.769.3170

Core Competencies:

- Industrial Product and Process Development
  - Advanced Engineering Analysis
  - FEA, CFD, and Thermal Analysis
  - Vibration, Seismic, and Structural Simulation
  - CAD Modeling- 2D & 3D
  - Timing Studies
- High-Temperature Engineering and Material Science
- Crystal Growth Systems
- Complex Part Handling
  - Micro-Precision
  - Unique Geometry
  - High-Speed
- Total Program Management
- Comprehensive Supply Chain Expertise

Key Differentiators:

At Re:Build DAPR, we do things differently. We offer customers a unique combination of engineering, creative design and process, and pragmatic program management. Our rigorous project management plays a critical role in meeting project requirements, including delivering on budget and on time. We know that successful projects require early deployment of the best engineering and design services, but must also include ongoing comprehensive supply chain assessment and robust risk identification and mitigation processes. This holistic approach allows us to design, engineer, plan, build, and test the best solution at the lowest total cost, with the least possible risk, on behalf of our customers.

Highlighted Customers:

- 6K
- Antora Energy
- Desktop Metal
- Form Energy
- Fujifilm Dimatix
- Ginkgo Bioworks
- Wakefield Vette

LEARN MORE:

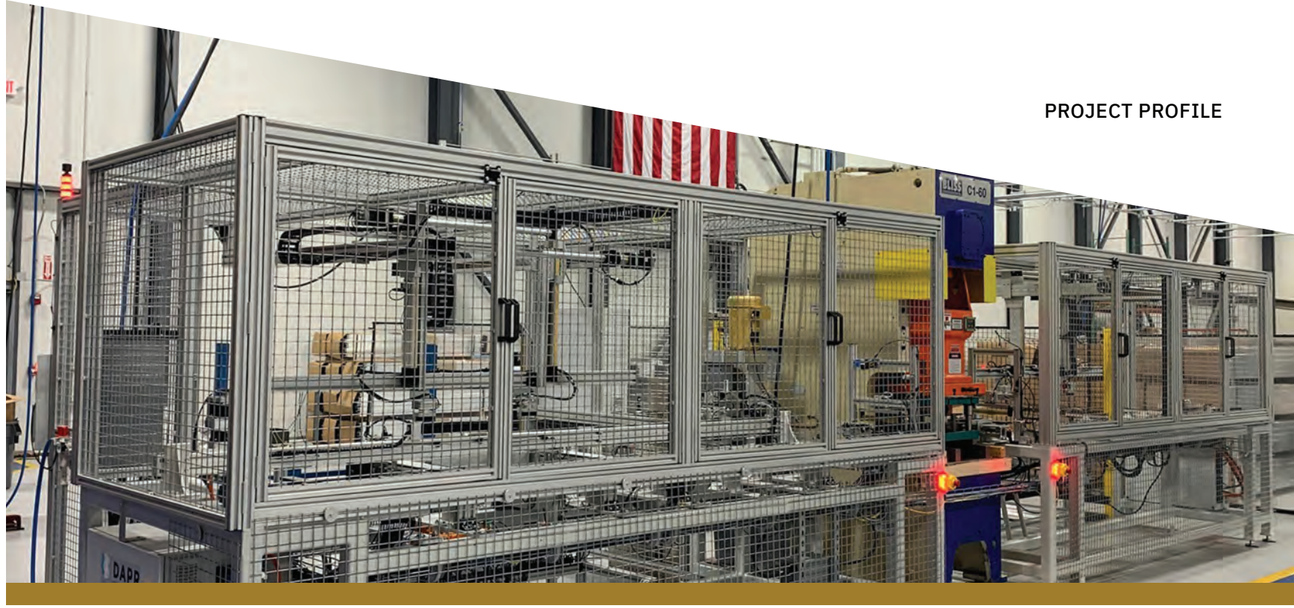
RE:BUILD MANUFACTURING | DAPR ENGINEERING|LLC

PROJECT PROFILE

Automated Punch Press for Aluminum Extrusion Creation

Industrial Manufacturing

An industrial solutions provider with expertise in the fabrication of aluminum extrusions sought out Re:Build DAPR to develop a new automation system to create their extrusions.



Re:Build DAPR was tasked with creating a machine that could load blank aluminum extrusions in bulk onto a conveyor system, pick and place individual extrusions onto an actuator that pushes the extrusion through the press for pattern punching, present the part to a mill for slot milling, and neatly stack the extrusions on a cart, ready for packaging.

Challenges

Handling numerous extrusion profiles and punch patterns.

This client is well known for their ability to fabricate numerous extrusion profiles. As such, it was vital that the machine accommodate all six profiles, each with multiple punch patterns and lengths ranging from 12” to 66”.

Integration with aging equipment.

The client requested that their current Bliss Press machine be utilized in the design, which introduced dimensional constraints into the design process and communication challenges between the machines due to the lack of reference documents for the Bliss Press.

Part inspection and consistency.

In the past, the client struggled to implement a robust quality control process, resulting in issues with part consistency that weren’t identified prior to being shipped.

Solutions

Re:Build DAPR seamlessly integrated old, outdated technology with new to develop an automated punch press that isolates the raw material, extrudes it to the specified profile, and neatly stacks each extrusion.

The design utilizes a series of grippers and clamps to properly align the extrusions, and a robust, electric belt-driven actuator to maintain positional accuracy. To provide a vigorous quality control process, Re:Build DAPR implemented Keyence visual inspection system. This system actively checks the location of the punched holes and compares that to the known dimensions found on the detailed part drawings.

Value Delivered

Re:Build DAPR was able to create a machine that reduces the client’s machine changeover time from 8 hours to 30 minutes and meets the feature positional tolerance of +/- 15 thousandths of an inch.

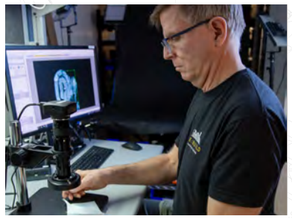
Re:Build DAPR’s system is more robust and reliable, and the client can now inspect every part, enabling them to identify non-compliant parts before shipment.

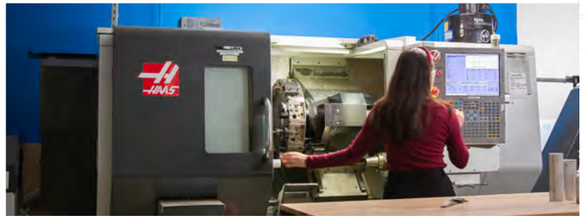
SERVICES:

- Mechanical & Engineering
- PLC Programming
- Turnkey Solutions Design
- System Integration

APPLICATIONS:

- Multi-SKU Material Handling
- Quality Control
- Conveyance
- Palletization
- Vision Inspection





Biotechnology Product Commercialization, Micro- and Milli-fluidics Oriented Development, Medical Consumable, and Instrument Production

Re:Build Fikst's team of mechanical, software, and electrical engineers has vast experience in biomedical and biotech instrument and consumable design and specializes in quick, practical product development that accelerates product commercialization. Our expertise in system development, mechanical engineering, embedded systems, and design for manufacturing enables us to provide full-scale engineering development, rapid ideation and prototyping, and problem-solving to address your technical challenges. We also support your company's short-term needs, an especially valuable service when you are facing particularly complicated problems. We are experts in industrial automation and can help you establish efficient, cost-effective, productive warehouse management 2.0 operations.

INDUSTRIES SERVED:

- Cleantech
- Health
- Mobility

LOCATIONS:

187 Ballardvale Street
Suite B210
Wilmington, MA 01887

CONTACT:

info@rebuildmanufacturing.com
781.491.0845

Core Competencies:

- Researching and Understanding Complex Technical Challenges
- Building SolidWorks CAD Models – Master Models, Complex Surfacing, Large Assemblies, PDM
- Performing Multiphysics Simulation – Fluidic, Structural, Thermal, Electrical
- Rapid On-Site Prototyping for Technology Development
- Sophisticated Prototype Testing to De-risk the Design
- Design for Manufacturing – Injection Molding, Sheet Metal, Extrusion, Casting, and More
- Design for Assembly and Serviceability
- Transitioning to Manufacturing – Drawings, BOMs, Work Instructions
- Assembling Pilot Builds of Consumables and Instruments
- Handing Off to Contract Manufacturer – Pilot Builds and Training of CM

Key Differentiators:

Re:Build Fikst combines engineering fundamentals, analysis, sophisticated instrumentation and rapid prototyping to solve complicated technical challenges. We have extensive in-house, rapid prototyping capabilities, including CNC machining, soldering, 3D printing, laser cutting, and silicone casting. We routinely prototype special production assembly methods, including ultrasonic welding, diffusion bonding, heat sealing, UV gluing, and laser welding, to derisk manufacturability early in the design process. We also offer analytical expertise in fluid dynamics, including particle tracing that employs COMSOL multiphysics simulation. We design for high-volume manufacturing utilizing prototyping and analysis, and then facilitate pilot runs of consumable and device prototypes in-house, easing the transition to full production.

Highlighted Customers:

- Akouos
- Aquyre Biosciences
- Evizia
- FlaskWorks
- Flexomics
- The Jackson Laboratory
- Lyndra Therapeutics
- Nanopath
- NextGen Jane
- Sage Science
- Sight Diagnostics
- Vapotherm

LEARN MORE:

SCAN ME

RE:BUILD MANUFACTURING | fikst product development

PROJECT PROFILE

Accelerating the Pace of Drug Discovery: A Novel Organ-On-A-Chip Platform

Health

Javelin Biotech is developing a predictive platform for preclinical drug discovery that merges human tissue chips and digital twin technology to accelerate pharmaceutical development.

Re:Build Fikst was approached by the small team of tissue engineers, biologists, and senior leadership to help develop the hardware platform that accompanies the novel biology approach invented by Javelin. The Re:Build Fikst team designed and built physical prototypes for the tissue engineers to run experiments and learn what was important to their process.

Challenges

The industry standard is to utilize animal or simplified in vitro models in the preclinical drug discovery process. However, both of these methods lack the sophistication required to develop clinically mimetic tissue that is capable of providing longitudinal and human-relevant data. To provide an improved approach, the Javelin chip needed to be a small-volume, recirculating system that could be easily used by various types of scientists.

Solutions

Re:Build Fikst collaborated with the Javelin team at each stage of the development process to identify the technical and user needs for each prototype, which were then translated into concepts by Re:Build Fikst, evaluated using COMSOL, and incorporated into a test chip. DFM and DFA techniques were implemented to quickly and inexpensively make prototypes at the fidelity needed for different stages of the technology development process. From laser cut and pressure sensitive adhesive to machined plates that were diffusion bonded to laser welded injection molded chips, Re:Build Fikst supported the full design process from technology development through to low volume manufacturing, and are looking ahead to commercial scaling.

Value Delivered

Re:Build Fikst cut the design cycle time down to one week per chip iteration, which includes analysis, design, and manufacturing. This allowed the biologists to dynamically assess the field of solution options and optimize the functionality required for their technology. Having transitional manufacturing capabilities in-house enabled Re:Build Fikst to deliver chips made with the preferred materials at the quantities required at every step of the design process, empowering the Javelin team to prove out their technology.

INDUSTRIES:

- Biotech
- Pharmaceutical
- Health

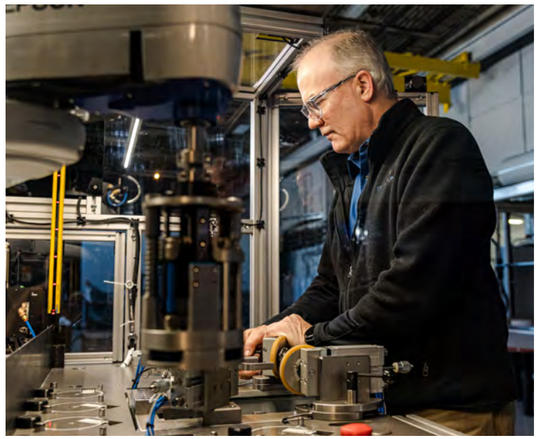
SERVICES:

- Mechanical Engineering Design
- Custom Electronics Design
- Embedded Firmware
- Rapid Prototyping
- Computational Fluid Dynamics Simulation
- Design for Manufacturing
- Low Volume Production

APPLICATIONS:

- Pharmacokinetics
- Custom Tissue Engineering
- Drug Discovery
- Biology Research

RE:BUILD MANUFACTURING | OPTIMATION



Chemical, Bulk and Continuous Process Development, Design and Systems Production

Re:Build Optimation was founded with a passion for manufacturing and a desire to provide industrial clients with a single source for projects ranging from simple upgrades and maintenance to custom-engineered, turnkey design and fabrication solutions. Re:Build Optimation delivers world-class technology outcomes across a wide variety of industries, including energy, chemical, food, glass, and more. Our two hundred team members upgrade control systems, implement new production capabilities from skids to full lines and facilities, design and build custom machines, and fabricate virtually anything our customers require. Re:Build Optimation aims to develop lasting relationships with our clients by partnering with them to promote and advance manufacturing in the United States.

INDUSTRIES SERVED:

- Cleantech
- Health
- Industrial Equipment
- Mobility

LOCATIONS:

50 High Tech Drive
Rush, NY 14543

600 Lexington Avenue
Suite 104
Rochester, NY 14606

CONTACT:

info@rebuildmanufacturing.com
585.321.2300

Core Competencies:

- Automation and Controls Engineering and Design
- Chemical Engineering
- Mechanical Engineering and Design
- Safety Engineering
- Construction and Project Management
- Electrical and Instrumentation Engineering and Design
- Machine Design and Build
- Process Development and Optimization
- Control Panel Design and Fabrication
- Skilled Trades: Welding, Pipefitting, Mechanical, Electrical, Maintenance and Spare Parts, and Sheet Metal Fabrication
- Systems Integration
- Web Handling and Conveyance
- Hydrogen and Petrochemicals

Key Differentiators:

Re:Build Optimation's specialties include roll-to-roll manufacturing and the design and build of skids using a turnkey, modular-process. Our skid engineering and manufacturing services for process and discrete applications produce robust and innovative solutions at scales ranging from lab to pilot and all the way up to industrial-grade production. Our experts combine years of practical know-how, an understanding of continuous-process roll-to-roll science, consulting and training services, and piloting of diverse materials. The Re:Build Optimation team is backed by world-class technology and a knowledge base developed over more than a century of process experience.

Highlighted Customers:

- Carestream Health
- Davis Standard
- Eastman Kodak
- Halliburton
- Medtronic
- Once Again Nut Butters
- O-I Glass
- Revere Copper Products
- Ultralife Batteries

CERTIFICATIONS:

- ISO9001 2015
- CSIA Certified & Founding Member
- ASME Registered U&R Stamp
- Rockwell Automation Silver Systems Integrator
- National Instrument Silver Alliance
- ITAR Registered
- UL508A Listed Panel Shop

LEARN MORE:

SCAN ME

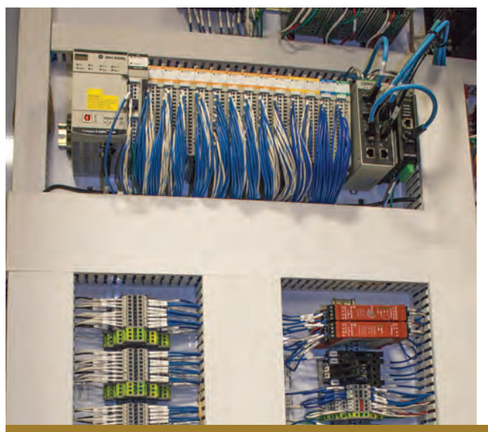
RE:BUILD MANUFACTURING | OPTIMATION

PROJECT PROFILE

Jet Fuel from Farm Waste

Cleantech

The 2020 Summer Olympics were to be held in Japan with a primary theme of sustainability. Housing, medals, uniforms, etc. were being made from recycled materials, and it was desired that the jets used for the stadium flyover would use fuel made from farm waste. Byogy Renewables, an American company, received the contract and contacted Re:Build Optimation to develop the technology to create the fuel.



Challenges

A system of reactors and stills was needed to convert farm waste to ethanol and then ethanol to jet fuel. The system needed to meet all Japanese mechanical and electrical codes, and pass final testing after being shipped to Japan.

Solutions

The Byogy Alcohol to Jet (ATJ) technology is a unique integration of proven petrochemical processes using traditional catalytic chemistry and standard commercial equipment that converts any form of ethanol, or butanol, into low carbon renewable fuels. The system fabricated by Re:Build Optimation included a dozen pressure vessels and a distillation column designed to implement the chemical processes needed to execute the required processing. The system is controlled by a fully-automated instrumentation system of sensors, valves, and Rockwell PLCs. Piping was designed and fabricated to function effectively under the high-pressure requirements of the chemical process.

Value Delivered

Byogy Renewables, Inc. was one of the first producers of a premium grade, full-replacement, sustainable aviation fuel that, with future regulatory approvals, may not require any blending with fossil-based fuel for the use in existing aircraft or related fuel infrastructure. The success of this pilot project is a validation that a global alternative fuel specification can be commercialized. This is a trigger that will allow Byogy to expand commercialization of its proven technology as it continues to push for fully synthetic use in the future.

INDUSTRIES:

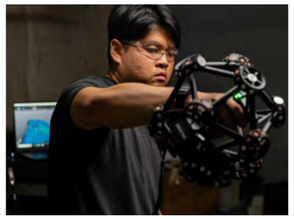
- Chemical
- Energy & Power
- Government
- Oil & Gas

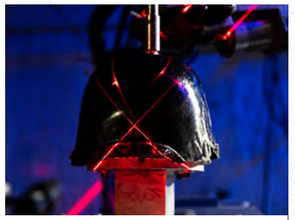
SERVICES:

- Automation & Controls
- Chemical Engineering
- Construction/Project Management
- Process Engineering & Design
- System Integration

APPLICATIONS:

- Conceptual Design/ Engineering
- Converting & Finishing
- Fabrication & Assembly
- Inspection & Test Systems
- Installment & Dismantlement
- Machine Build
- Skid Systems
- Test Systems
- Turnkey Systems





Advanced Thermoplastic Composites

Re:Build Oribi designs and produces advanced thermoplastic composites with high-speed, automated manufacturing technologies, enabling widespread adoption of composite materials for high-volume production applications. Originally limited to niche applications in the aerospace industry, thermoplastic composites offer significant potential to reduce weight, improve performance, and reduce cost. Historically, this class of materials lacked an affordable conversion technology to turn them into finished parts. Re:Build Oribi delivers on the potential of thermoplastic composites and offers customers the ability to incorporate highly engineered composites into nearly any application.

INDUSTRIES SERVED:

- Aerospace & Defense
- Cleantech
- Health
- Mobility

LOCATIONS:

5850 E 56th Avenue
Commerce City, CO 80022

CONTACT:

info@rebuildmanufacturing.com
303.376.9430

Core Competencies:

- Structural Component Design and Engineering
- Material Selection and Qualification
- Composite Material Forming and Draping Analysis
- Tooling Design, Engineering, and Production
- Thermoplastic Composite Tape Slitting
- Tailored Blank Design, Engineering, and Production
- High-Rate Thermoplastic Composite Thermoforming
- Thermoplastic Composite Compression Molding
- Thermoplastic Composite Recycling
- Composite Machining and Finishing

Key Differentiators:

Re:Build Oribi has a unique capability to convert reinforced thermoplastic composites affordably for high-volume production. We combine practical, high-speed automation with knowledge of materials science to unlock the full potential of continuous fiber-reinforced composites. Advanced simulation and software tools enable us to minimize the cost and time required to develop advanced composite components. We leverage diverse engineering capabilities with experience in a wide range of industries, from aerospace and defense to sporting goods and consumer products.

Highlighted Customers:

- GE
- Gentex
- CCM
- Safran

CERTIFICATIONS:

- Berry Compliant
- ISO9001:2015

LEARN MORE:

SCAN ME

RE:BUILD MANUFACTURING | ORIBI

PROJECT PROFILE

Updated Component Design for Direct Air Capture Plant

Cleantech

A leader in the energy industry is harnessing the natural powers of limestone to remove billions of tons of CO2 from the atmosphere using the world's most cost-effective Direct Air Capture technology.

Challenge #1

A leader in the energy industry approached Re:Build Oribi in April 2023 to design a shelf to replace the ABS plastic version they had been using, which couldn't support its own weight or the weight of the limestone powder without bowing in the middle. The ABS tray was also too expensive for their budget models.

Solution #1

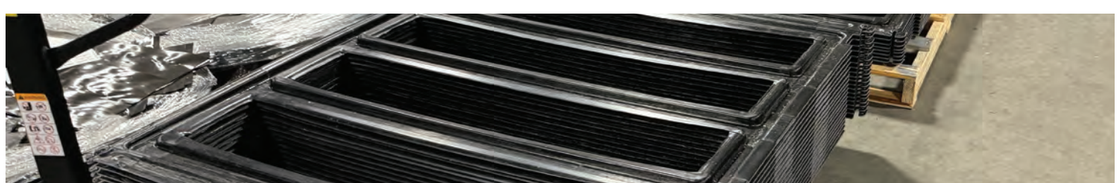
Re:Build Oribi, together with Re:Build Answer Engineering, designed a lightweight, cost-effective alternative. Our customer ordered 5,000 of these newly designed shelves. The last of these parts were delivered in November 2023 and they were installed in their demonstration facility in California.

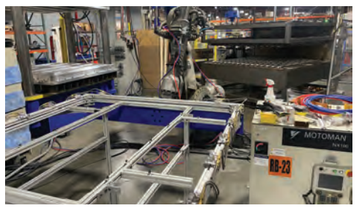
Challenge #2

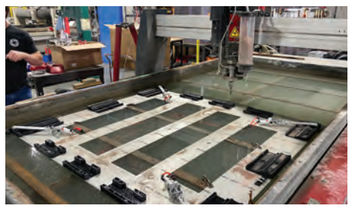
After designing the shelf, Re:Build Oribi quoted a two-part set that included a new tray to replace the ABS tray that was being used to process limestone. Our customer challenged Re:Build Oribi to decrease costs by 50%.

Solution #2

Re:Build Oribi addressed the challenge by integrating the functionality of the shelf and tray into a single part. Through close collaboration with our customer during a paid design study, the teams successfully modified the requirements and optimized material usage to meet the target price. Prototype parts were formed at Re:Build's skunk works facility, and our customer conducted a first article inspection in May 2024. All 80 prototype parts were delivered in late June 2024 and are now undergoing testing and validation.







Value Delivered

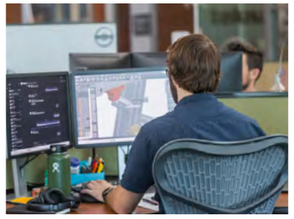
Re:Build Oribi developed and delivered a more robust structural solution for our customer's first build while meeting a very aggressive price target. This was against a very compressed schedule and through a series of internal collaborations and customer alignment, Re:Build Oribi was able to fully satisfy the customer's timeline, schedule, and cost targets.

SERVICES:

- Design & Analysis
- Composite Fabrication

APPLICATIONS:

- Conceptual Design/ Engineering
- Fabrication & Assembly
- Digital Analysis
- Thermoplastic Composite
- Prototype



Industrial Design, Product and Market Research, and Contract Manufacturing

With over 35 years of product design, development, and manufacturing experience, Re:Build Tekna transforms innovative ideas into tangible opportunities. Specializing in medical devices and industrial and consumer products, we continuously evolve and expand our capabilities to meet the demands of evolving industries and a diverse customer base. As a strategic partner, Re:Build Tekna empowers businesses to grow through the design and manufacturing of products, services, and experiences.

INDUSTRIES SERVED:

- Cleantech
- Health
- Industrial Equipment
- Mobility

LOCATIONS:

3400 Tech Circle
Kalamazoo, MI 49008

3665 Midlink Drive
Kalamazoo, MI 49048

CONTACT:

info@rebuildmanufacturing.com
269.978.3500

Core Competencies:

- Medical Device, Industrial, Commercial, and Consumer Products
- Scalable NPD Process, Robust QMS, and Project Management
- Sketch to Prototype Innovation Services
- Cross-Sector DFM/DFA
- 195+ Suppliers on High-Mix ASL
- Small Batch Manufacturing to Scale Production
- Research – Quantitative and Qualitative
- Portfolio Management and Product Roadmapping
- Industrial Design and Human Factors
- User Experience and User Interface Design
- Branding, Visualization, and Video Production
- Engineering, Testing, and Analysis
- High-Value, Low-to-Mid Volume ISO 13485 Contract Manufacturing

Key Differentiators:

Re:Build Tekna upholds the company's manufacturing mission by providing end-to-end product innovation and systems production. Our decades of experience designing for manufacturing combined with a robust quality management system and a strategically expanded approved-supplier list has enabled the successful launch of over 500 products. The human-centered and business-minded approach we take to product development keeps our focus on stakeholder needs and the realities of business and manufacturing. Customized R&D, bespoke project teams, and scalable program management enable successful product launches across numerous sectors.

Highlighted Customers:

- Alcon
- Bissell
- Dometic
- Exro Technologies
- KitchenAid
- Newell Brands
- Proto Inc.
- Sartorius
- Stryker
- Tru-D SmartUVC
- Whirlpool
- Zoetis

CERTIFICATIONS:

- EPA and FCC
- FDA Registered, 21 CFR 820
- IEC 60601-1 and 61010 Electrical Standards
- ISO 13485 Certified
- Quality Systems
- UL, ETL and TÜV

LEARN MORE:

RE:BUILD MANUFACTURING | tekna.

PROJECT PROFILE

Increasing Compliance to Infection Prevention: Tru-D SmartUVC Launches the iQ System

Healthcare

Tru-D SmartUVC, a PDI Solution, provides UVC disinfection devices to hospitals looking to reduce Health Acquired Infections (HAIs). Re:Build Tekna worked with Tru-D to deliver market research, device design, hardware and software development, testing, sourcing, and manufacturing of the Tru-D iQ System.

The Tru-D iQ system is purpose-built to address unique challenges of disinfection in hospital patient rooms with conjoined bathrooms. It enables greater compliance to infection prevention protocols with improved efficiency.

Challenges

Tru-D approached Re:Build Tekna feeling the competitive pressures in the market. The Tru-D Classic was over 10 years old and lacked critical safety features and data reporting services expected by customers. The smart sensing patents that propelled Tru-D to success were expiring, leaving their 60% market share vulnerable. Over the years, Tru-D had built a successful sales team but lacked the internal research and development team needed to develop a new product and manufacturing capability to release it to market.

Solutions

The Tru-D iQ System has significantly faster disinfection cycle times with improved efficacy while providing actionable data reporting and improved compliance. The system consists of multiple disinfection devices that can be used together or independently, allowing Tru-D to break into new markets with UVC needs. Re:Build Tekna supported all aspects of the new product development process for Tru-D and continues to provide ongoing contract manufacturing support. The iQ System is produced at Re:Build Tekna's ISO 13485 manufacturing facility at a lower cost than the Classic and commands a higher average sales price (ASP) in the market.

Value Delivered

The Brain to Box™ support from Re:Build Tekna allowed Tru-D to bring a novel product to market while continuing to focus on growing its sales and marketing teams. The creation of new IP helps protect Tru-D from competitive threats and reinforces the Tru-D brand as a leader in the UVC market. The flexibility of the iQ System expands Tru-D's reach and helps capture more of the total addressable market.

INDUSTRIES:

- Medical Device
- Life Sciences
- Consumer Products
- Industrial Equipment
- Lifestyle

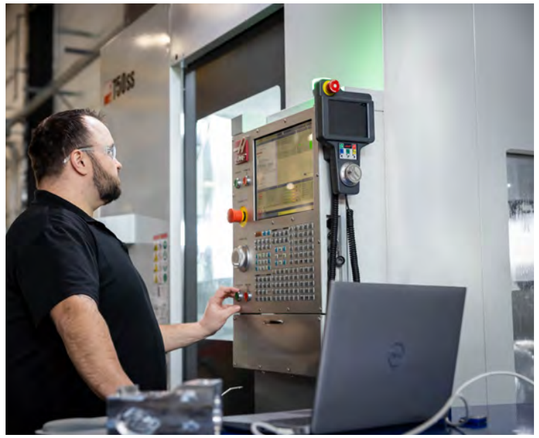
SERVICES:

- Research
- UX/UI Design
- Industrial Design
- Branding
- Engineering
- Manufacturing

APPLICATIONS:

- Market Research
- User Needs
- Conceptual Design
- Prototyping
- Testing
- Fabrication & Assembly
- Finished Goods

RE:BUILD MANUFACTURING



A Flexible, Collaborative Manufacturing Partner

Re:Build New Kensington delivers advanced manufacturing, precision machining, integration, and assembly solutions through a highly collaborative and transparent approach. We blend traditional manufacturing processes with digital tools and purpose-built software while maintaining a relentless focus on continuous improvement. Our 175,000-square-foot, state-of-the-art facility supports a range of capabilities, providing high-performance, mission-critical electromechanical systems and subsystems to customers across various industries.

We believe transparency and collaboration creates a unique opportunity for us, and our customers, to win together. In addition to our core competencies in manufacturing, our Brain to Box™ capabilities allow us to provide comprehensive support throughout the entire product lifecycle.

Re:Build Manufacturing's software and digital manufacturing tools deliver solutions faster, and for a lower total cost. We also utilize a unique supply chain process that relies on internally sourcing components when possible, and on building healthy, win-win partnerships with local and regional suppliers.

INDUSTRIES SERVED:

- Aerospace & Defense
- Cleantech
- Health
- Industrial Equipment
- Mobility

LOCATION:

225 Schreiber Industrial Park,
New Kensington, PA 15068

CONTACT:

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Our initial in-house capabilities include precision machining, welding, and assembly services, including:

- 3-axis/4-axis/5-axis CNC machines and advanced turning centers
- TIG and MIG welding services
- Quality management system design/implementation
- Final system test and integration
- Assembly and packaging services
- Diverse supply chain partnerships
- Lean/Continuous Improvement culture

Precision Machining **Welding** **Assembly/Packaging**

Commitment to Quality:

- **Quality Assurance:** Committed to delivering high-quality products on time and within budget, we foster a culture of Right First Time and Zero Escapes through ongoing improvements with ISO9001/ AS9100 Quality Management Systems.
- **Advanced Product Quality Planning (APQP):** We align with AS9145 principles and industry best practices, ensuring thorough planning and execution of manufacturing processes.
- **Advanced Metrology Equipment:** Our manufacturing relies on digital laser scanning and automated CMM tools for tasks like prototype scanning, first-piece inspection, reverse engineering, and machine tool calibration.
- **Inspection, Measurement, & Test Equipment (IMTE):** Our Quality Control team utilizes the latest IMTE to ensure product conformance and maintain high-quality standards.

Supply Chain Strength:

Leveraging our extensive Re:Build Manufacturing network, we have stable and diverse supplier relationships to source nearly any component or sub-system for our customers. We are always seeking to collaborate with suppliers who share our dedication to transparency, quality, safety, and ethical practices to help our customers succeed. We utilize many tools to do this, including:

- Re:Build approved supplier list (ASL)
- Key vendor scorecards with ongoing improvement activities
- Multiple sourcing for risk reduction/ redundancy
- Vendor-engaged supply chain planning for key programs
- Technical/metallurgical support
- Material testing for incoming and outgoing quality management

Application Engineers:

Our diverse application engineering team has extensive experience in material science, structural design, precision metals machining, fabrication, and assembly of electromechanical systems. Drawn from diverse backgrounds in aerospace, medical device, automotive, and mold-making industries, our on-site team engages with customers to help them identify the best process, at the lowest cost. Additionally, Re:Build has in-house teams that specialize in the design and construction of state-of-the-art automation systems to minimize labor and maximize quality for our customers.

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