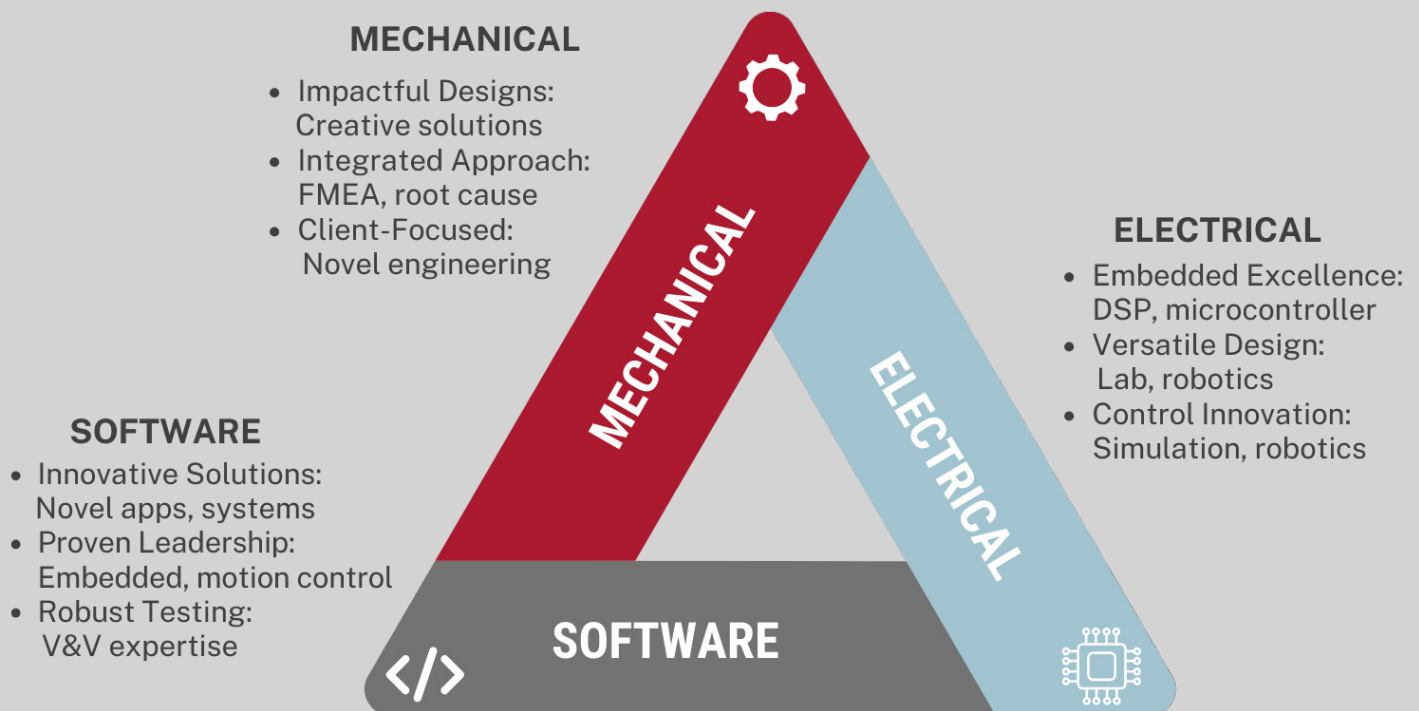# The Disciplines Behind Boston Engineering's Success

At Boston Engineering, we are driven by a vision to cultivate a self-perpetuating enterprise that attracts the brightest minds. Our commitment to tackling the industry's toughest challenges is fueled by engineering excellence, innovation, and entrepreneurial spirit. With a focus on mechanical engineering, software engineering, and electrical engineering, we stand at the forefront of developing new and impactful solutions.

MECHANICAL
- Impactful Designs: Creative solutions
- Integrated Approach: FMEA, root cause
- Client-Focused: Novel engineering

ELECTRICAL
- Embedded Excellence: DSP, microcontroller
- Versatile Design: Lab, robotics
- Control Innovation: Simulation, robotics

SOFTWARE
- Innovative Solutions: Novel apps, systems
- Proven Leadership: Embedded, motion control
- Robust Testing: V&V expertise

Software Engineering

Real-world problems require real-world solutions. Our software engineering team at Boston Engineering is dedicated to designing and creating computer systems and applications that address today's toughest challenges. Our expertise lies in delivering novel solutions, including:

- Designing embedded systems with unmatched performance and reliability
- Precision motion control for robotics, factory automation, and more
- Software testing, verification, and validation (V&V)

Capabilities Include:
- UI development (Web, mobile, embedded)
- Controls software
- Embedded software
- Robotic systems (ROS2)

- Operating systems:
  - Linux application development
  - RTOS (Zephyr, FreeRTOS)
- Internet of Things (IoT)
- Communications systems and protocols (WiFi, Cellular, BLE, Iridium)

Mechanical Engineering

Practical experience and creativity define our mechanical engineering services. Our team is passionate about creating innovative product designs and applying novel engineering to solve your toughest challenges. Mechanical engineering is woven into every phase of the integrated product development process, including:

- Design and process failure modes, effects analysis (FMEA)
- Root cause analysis
- Corrective action

Electrical Engineering

From theory to system design, Boston Engineering's electrical engineering team combines decades of experience to address your toughest challenges. Our capabilities include:

- Embedded System Design (Digital and Analog): DSP, microcontroller/ microprocessor
- System-level Design: Lab equipment, medical devices, and robotics
- Control Systems Design: Motion control, unmanned vehicles, robotics platforms
- Control Theory: Simulation and modeling, algorithm development, closed-loop design

Our development process integrates electrical engineering throughout, ensuring seamless collaboration and optimal results:

- Product analysis
- Design review
- Concurrent peer review
- Simulation using tools like Simulink, Gazebo, Ansys

What most can only imagine, we engineer.

Making a meaningful impact drove us to start the business in 1995 and it has driven every project since. From designing advanced products and technologies to accelerating time to market, Boston Engineering thrives on solving tough client challenges. We provide product design and engineering consulting from concept development through commercialization. Clients benefit from our deep product development capabilities, focused industry expertise, and ISO-certified quality management system.

Impossible Challenge? *Try us.*