



# MUNRO DEFENSE

**Munro's 30+ years of experience consulting across every major industry means we can offer design and manufacturing solutions that stretch the boundaries of what is considered possible.**

**ESTABLISHED IN 1989, MUNRO HAS BEEN AT THE FOREFRONT OF LEAN PRODUCT DESIGN, ENGINEERING AND MANUFACTURING CONSULTING FOR OVER THIRTY YEARS.**

Munro has improved dozens of iconic defense technologies, from the Javelin and Excalibur to the Iron Dome and F-35.

The Munro methodology is trademarked and proven to lower cost and increase quality across tens of thousands of commercial and defense products.

Munro's clientele includes the world's most renowned Defense and commercial customers.

## PAST PERFORMANCE

GENERAL  
DYNAMICS

LEONARDO DRS

LOCKHEED MARTIN



DEVCOM

NASA

IBAS  
INTEGRATED BASE ANALYSIS AND SUPPORT PROGRAM



AFRL



NORTHROP  
GRUMMAN

Raytheon

AM General

Honeywell

BAE SYSTEMS



L3HARRIS

BOEING

## LEGACY OF SUCCESS



▲ AMMUNITION

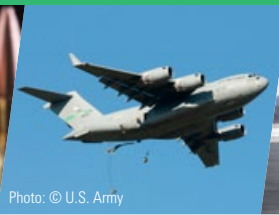


Photo: © U.S. Army

▲ AEROSPACE



▲ GROUND VEHICLES



▲ NAVAL



Photo: © Idaho National Laboratory

▲ NUCLEAR



Photo: © U.S. Army

▲ WEAPON SYSTEMS

## SERVICE OFFERINGS

### PRODUCT DEVELOPMENT

Refining products and processes to achieve an efficient design that maximizes Value, Quality, and Profit.

### MANUFACTURING IMPLEMENTATION

Enhancing the manufacturing process to reduce costs through increased efficiencies.

### BENCHMARKING INTELLIGENCE

Giving customers an edge through understanding of a product's design in the context of its competitive landscape.

### COSTING SERVICES

Understanding the complete picture through detailed analysis of every part, process, and tool.



# MUNRO

## GLOBALLY RECOGNIZED

Sandy Munro's Lean Design® principles have captured the attention of engineers and entrepreneurs worldwide through YouTube on their Munro Live Channel. These principles focus on the following key aspects:

90% of Total Life Cost (TLC) in defense and aerospace products is determined by design.

Reducing complexity and enhancing producibility starts with design.

Efficiency and precision comes from a Right First Time (RFT) approach.



## MANUFACTURING SYSTEMS DEVELOPMENT

It's nearly impossible to achieve truly efficient manufacturing without paying attention to Lean Design. The success of the Munro methodology reinforces the fact that manufacturing systems development must be intertwined with the design process to achieve optimal efficiency.

## LEAN DESIGN® OPTIMIZATION

Baseline Mapping  
"Discovery Process"

Value Challenge  
& Ideation

Redesign & Concept  
Generation

Costing & Validation

Business Case  
Report

## PES/COMPETITIVE ANALYSIS

BENCHMARKING  
& TECHNOLOGY  
REPORTS

REVERSE  
ENGINEERING

WORKSHOPS

DETAILED COSTING  
ANALYSIS

TRUSTED SUPPLY  
CHAIN & VALUE  
STREAM ANALYSIS

SETA &  
ENGINEERING  
SERVICES

## NAICS CODES

541330: Engineering Services

541420: Industrial Design Services

541715: Research & Development in the  
Physical, Engineering and Life Sciences

611430: Professional & Management  
Development Training