



Modular Engine Room

Removing the limits of packaged refrigeration systems

SUPERIOR DESIGN
COMBINED WITH
FACTORY
CONTROLLED
QUALITY





Truly Controlled Refrigeration

Over 100 years of engine room design and 50 years of industrial modular equipment fabrication combined into the **next generation of industrial refrigeration advancement to meet today's challenges**

- **Modular** – Meets current and future capacity requirements
- **Plug and Play** – Minimize field install time and quality issues
- **Energy Efficiency** – Utilizes energy efficient design and controls strategy
- **Low Charge** – Reduced facility charge by design and location
- **Adaptable** – Flexibility for multiple temperatures, capacities, and site location conditions
- **Industrial** – Designed to meet IIAR/ASME standards for NH3

Key Benefits

- 50-1,400TR Standard Ranges* (customizable for higher TR)
- Integrated with IIAR and OSHA standard safety equipment, ventilation, ammonia detection, and relief piping
- Easy Installation & Serviceability
- Suitable for Direct Refrigerant & all Common Secondary Refrigerants
- Optimized Energy Efficiency from Design & Controls Functionality
- Factory Built & Tested Equipment
- Reduced Total Cost of Ownership
- Reduced Construction Cycle Time

Modular Engine Room Compressor Package

The MER uses a Bitzer Ammonia Compressor Package to handle the load of your refrigeration needs. The BITZER ACP is designed to have excellent turndown and a lower cost of ownership than any compressor package on the market.

- Redundancy and Reliability
- Variable Speed Capabilities
- Design Flexibility (Temperature and Capacity)
- Service Friendly

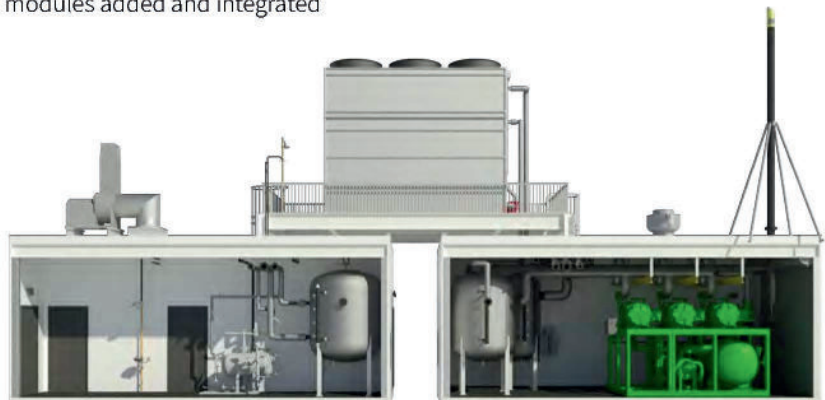


Customized Solutions using Standard configurable Products

VaCom configures our standard Modular Engine Room (MER) for the end user's solution.

Project Specific Details:

- 50-1,400TR Modular Engine Room, fully designed by VaCom engineering
 - Based on 1-2 modules
 - Higher TR available with more modules added and integrated
- BITZER Ammonia Compressor Package
- BITZER Industrial Vessels
- VaCom rPRO & Vault Controls
- Single Point Electrical Connection
- Fully Piped and Wired Engine Room
- Split into Sections, Each Section Shipped Individually for Final Assembly on Site
- Factory Inspected for Quality Assurance

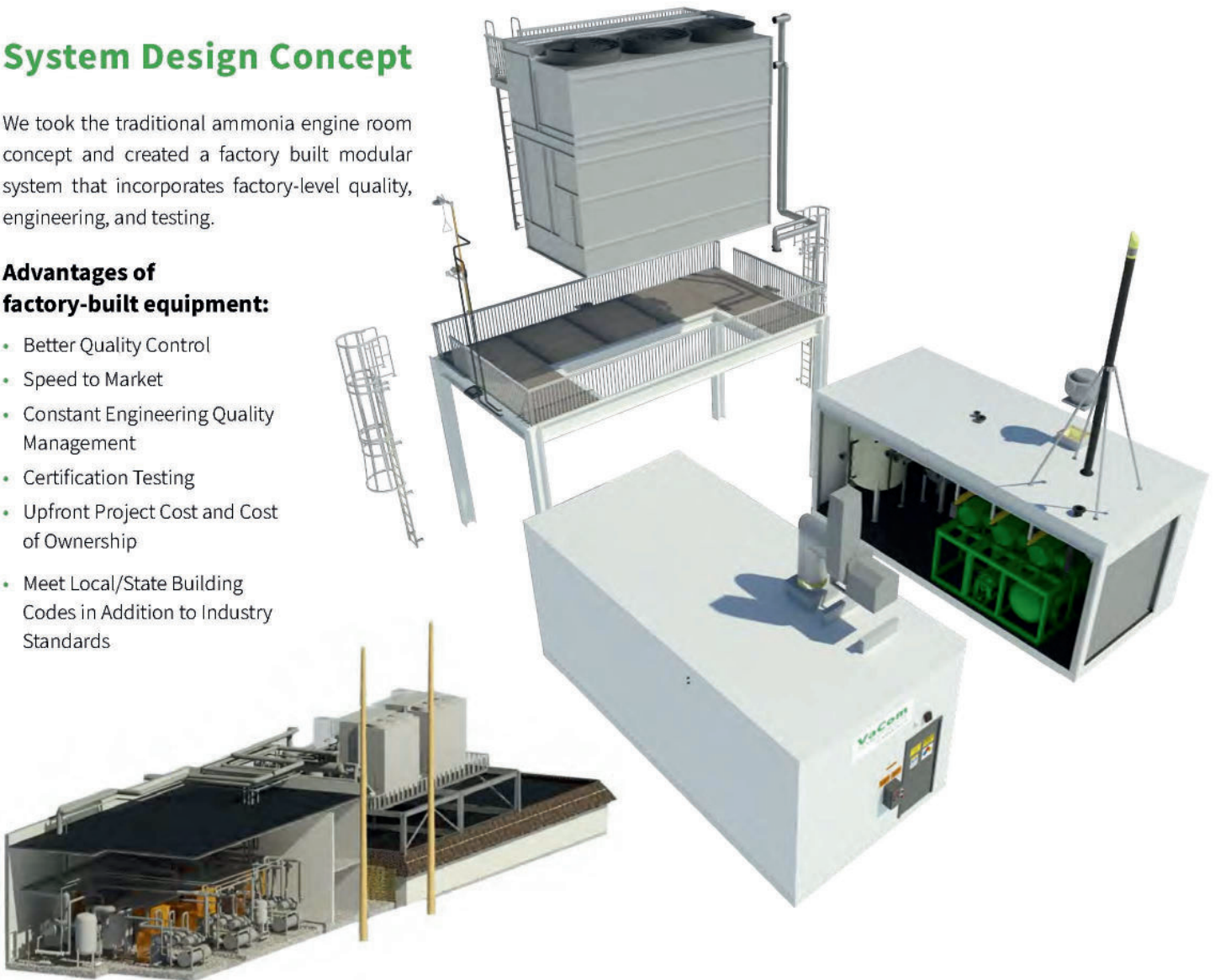


System Design Concept

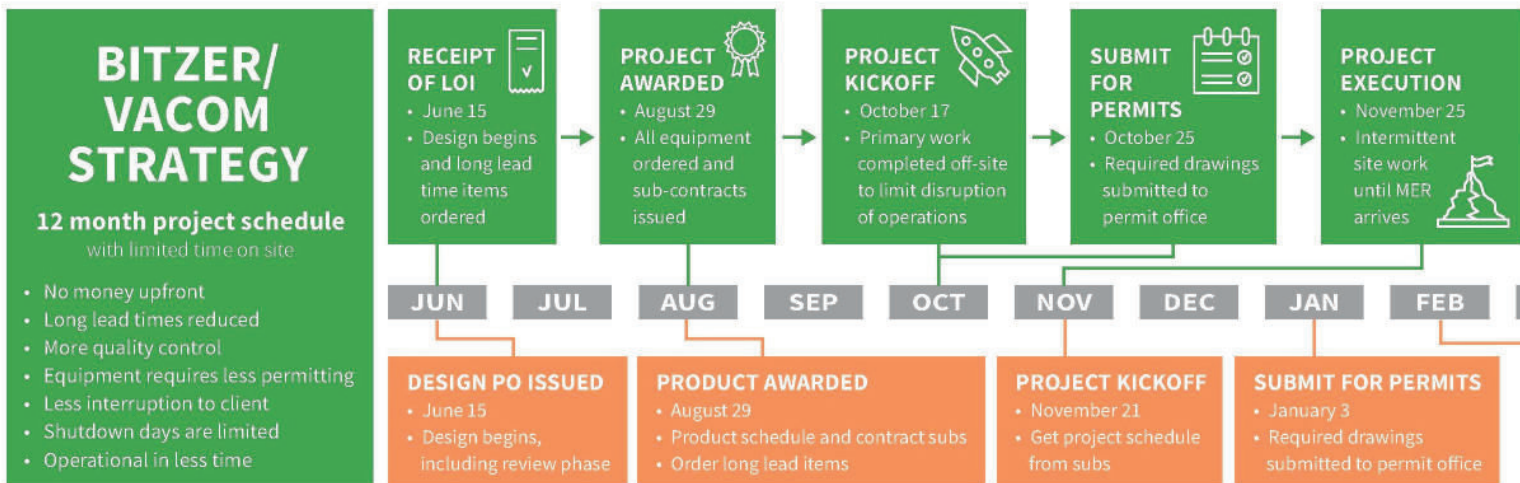
We took the traditional ammonia engine room concept and created a factory built modular system that incorporates factory-level quality, engineering, and testing.

Advantages of factory-built equipment:

- Better Quality Control
- Speed to Market
- Constant Engineering Quality Management
- Certification Testing
- Upfront Project Cost and Cost of Ownership
- Meet Local/State Building Codes in Addition to Industry Standards



Example Industrial Refrigeration

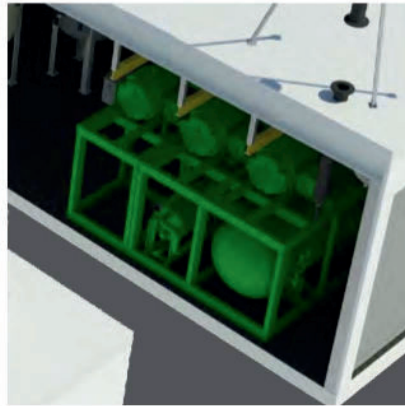




Modular Engine Room Safety and Ventilation

The MER is fully integrated with IIAR and OSHA standard safety equipment, ventilation, ammonia detection, and relief piping.

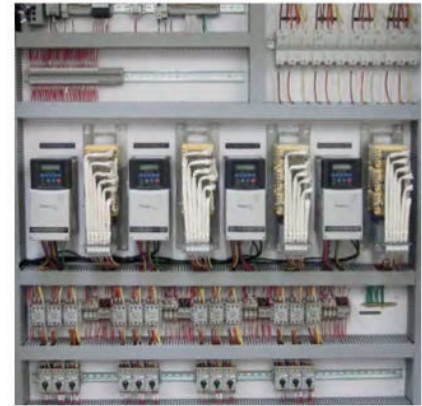
- Relief Calculations
- Ventilation Calculations
- Integrated Ammonia Detection
- Eyewash Stations



Modular Engine Room Construction

The MER construction is performed in a facility with state-of-the-art equipment.

- Welding robots
- Salvagnini L3+P4
- PythonX beamline
- Multiple 20-ton capacity high bay overhead cranes
- 15,000 sqft. paint finishing area

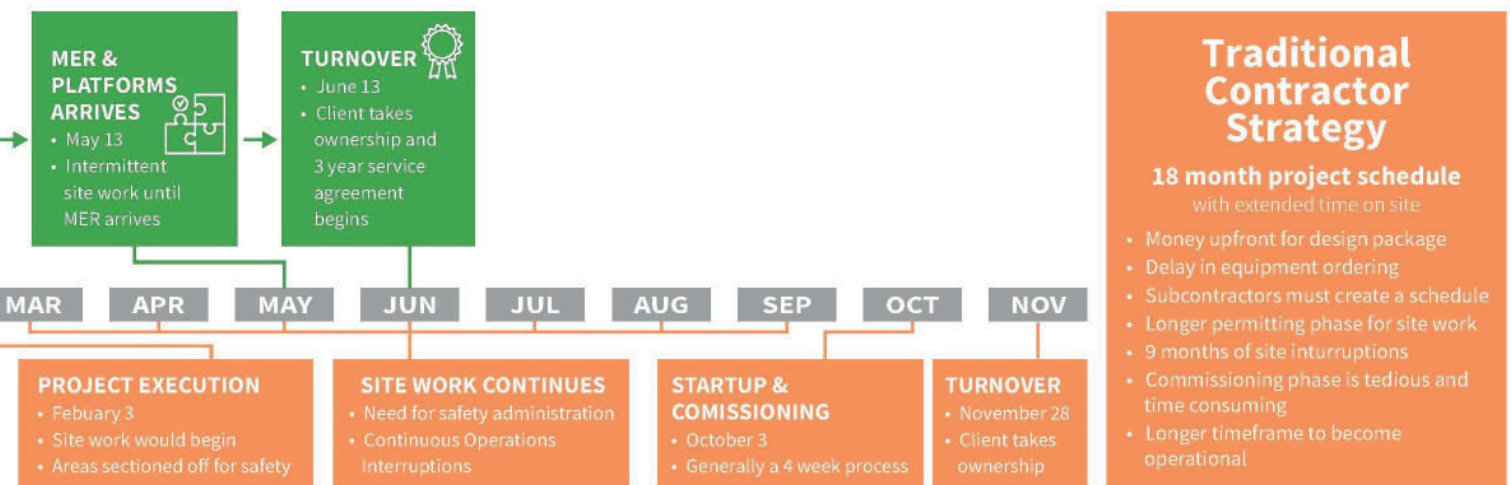


Modular Engine Room Controls

The MER utilizes VaCom rPRO & Vault Industrial Refrigeration Controls System employing industrial components and our Industry Standard EnergyDashboard®.

- Refrigeration Optimization System
- 24-hour Monitoring
- Communicates and controls plant equipment including:
 - Compressors
 - Evaporators
 - Vessels
 - Chillers
 - HVAC
 - Condensers

Project Schedule





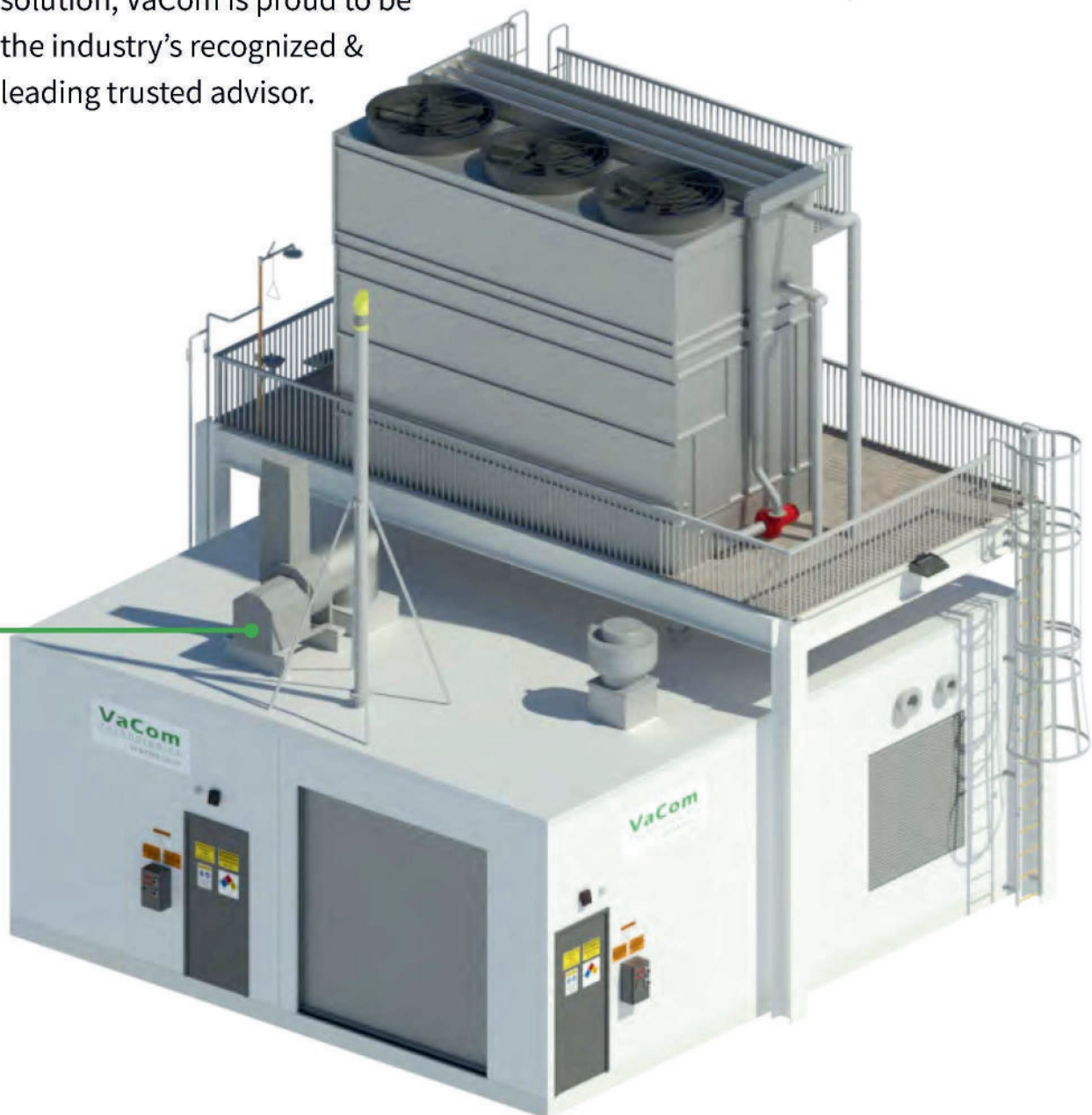
Revolutionizing the refrigeration industry by introducing the best-in-class, fully-engineered packaged systems directly from the manufacturer to the market. Working collaboratively with end-users and contractors to produce a truly customer-driven solution, VaCom is proud to be the industry's recognized & leading trusted advisor.

System Design Concept

“We took the traditional ammonia engine room concept and created a factory built modular system that incorporates factory-level quality, engineering, and testing.”

Joe Parker

National Sales Manager | VaCom Technologies, Inc.





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Subject to change // 03.2023