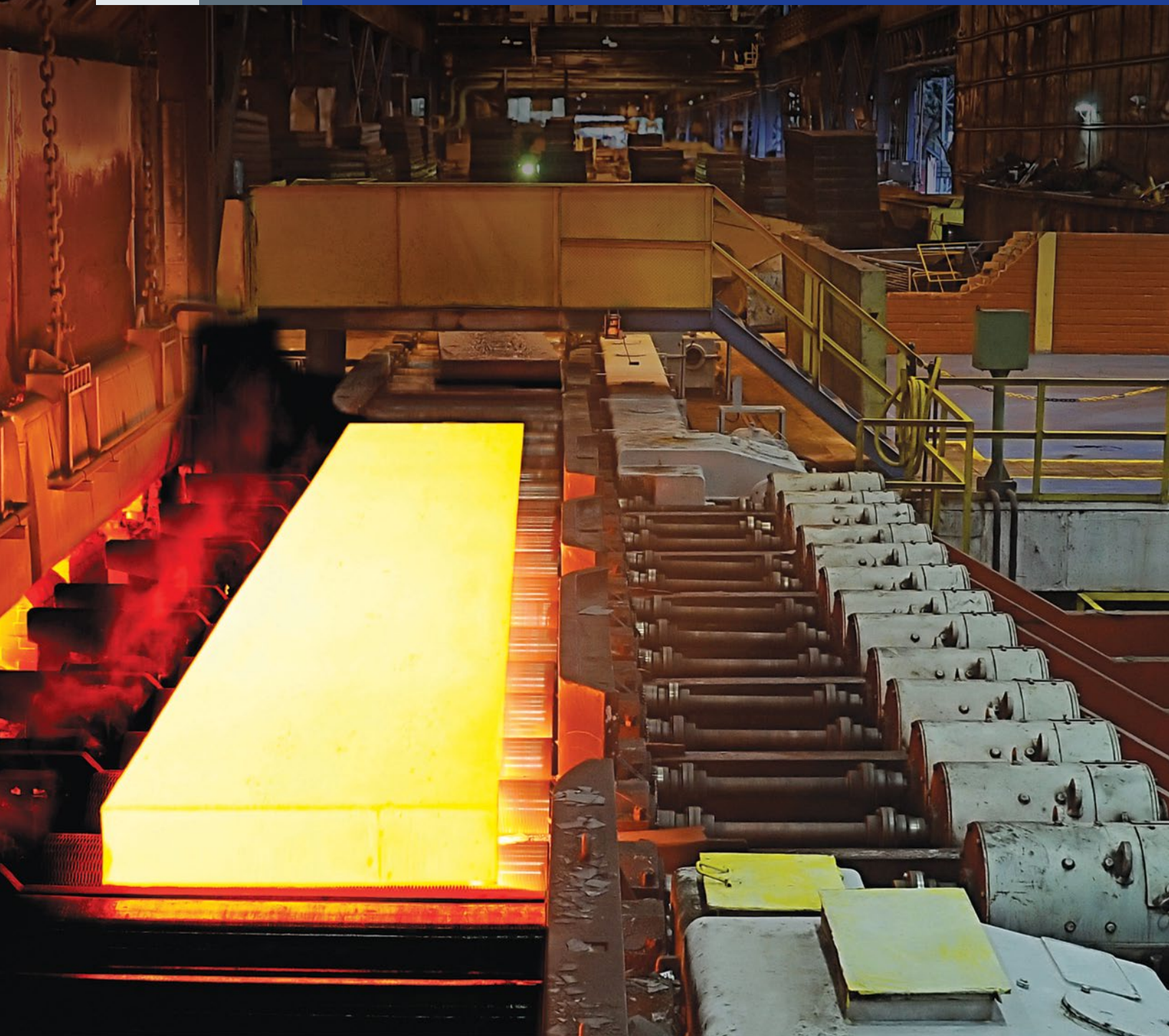




JNE

Consulting



METALS INDUSTRY

ENGINEERING SUCCESS GLOBALLY SINCE 1980

Metals Industry Experts

JNE provides full-service, multi-disciplinary engineering for heavy industry worldwide.

About JNE

Responding to the economic and technological challenges in the metals industry, JNE provides solutions to meet our clients' demands for continuous improvement by adding strategic value to your projects through innovative engineering.

JNE meets the increasing technical demands of the metals industry by incorporating the latest sophisticated software and hardware tools into our engineering design process. We are continually attracting engineers, technologists, and qualified staff from a broad range of industries, ensuring expertise in all fields of engineering. Our in-house Subject Matter Experts draw on their fields of specialization to support our engineering teams.



From Concept to Completion

In addition to full-service engineering, encompassing the major disciplines, we also offer additional services such as program management and procurement.

We provide a level of detail in our construction engineering that gives clear direction to the contractor. JNE is always focused on constructability, reliability, and maintainability. This ensures the most cost-effective construction while minimizing downtime in your existing operations.

JNE provides project and construction management services using proven technologies, systems, and work processes to provide you with optimal results. We deliver your complex and challenging construction projects safely, on time, and within budget.

JNE's experienced project teams can solve your most demanding engineering challenges.



CIVIL/STRUCTURAL
ENGINEERING



ELECTRICAL
ENGINEERING



MECHANICAL
ENGINEERING



PIPING/HVAC
ENGINEERING



PSR + INDUSTRIAL
SAFETY SERVICES

Execution

JNE's proven expertise in **project development** and **capital planning** will ensure that your project starts off on a solid foundation. We understand that when it comes to project work, surprises are never good. Our capital planning services guarantee that your project scope is clearly defined and your project funding needs are accurately predicted.

We offer **pre-feasibility studies** to select the best available technology for your project. We conduct a feasibility study for the selected technology to develop a detailed project execution plan, including Capital Expenditure (CAPEX) and Operating Expense (OPEX), project schedule, and financial Return on Investment (ROI) with sensitivity analysis.

Front-end engineering design and **project planning** provides clients with a strategic plan clearly outlining all of the specific requirements of the project at the early stages to help identify risk areas, opportunities for value engineering, and provide a cost estimate for budgeting and capital approval purposes.

SERVICES

- Functional specifications
- General arrangements
- Requirements planning
- Needs and facility analysis
- Constructability and Stage-Gate Reviews
- Process equipment planning
- Project scheduling
- Operational assessments
- Detailed workflow analysis

Automation + Panel Supply

Our full-service automation integration capabilities allow JNE to construct and factory acceptance test (FAT) your systems in-house to minimize on-site installation and commissioning time. Our panels are ISO 9001 registered and ULC certified, and we can offer various other industry standard certifications such as Canadian Standards Association (CSA) and Electrical Standards Association (ESA) upon request.

Wastewater Treatment Services

JNE designs custom wastewater, air, and solid waste treatment facilities for our clients. Our process engineers have many years of experience and have designed wastewater treatment plants in excess of 100,000 gallons per minute and air emissions control systems in excess of 1,000,000 standard cubic feet per minute. We can also provide process evaluations of existing systems, often resulting in cost-saving retrofits.



global experience

**JNE has successfully executed
the following metals projects.**



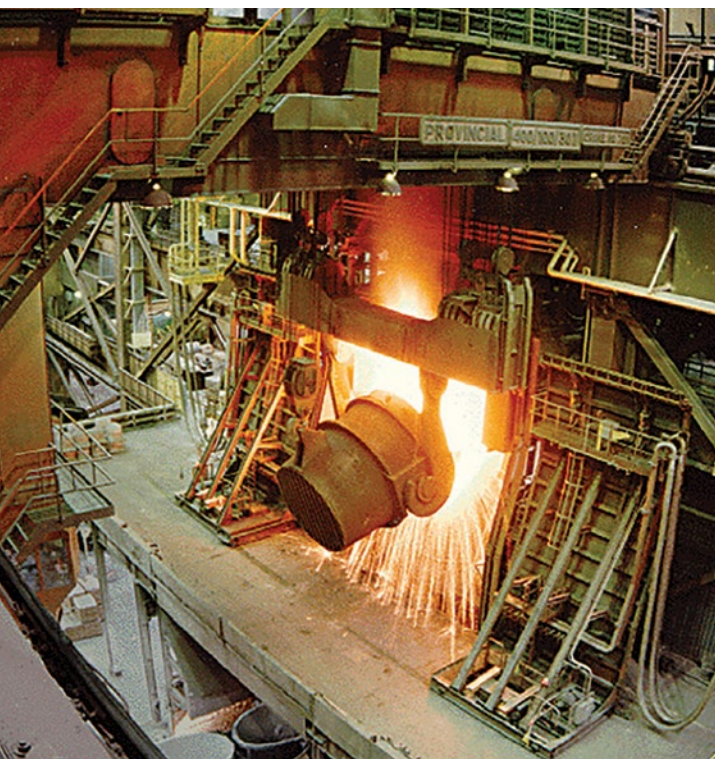
Coke Making

- › By-products plant upgrades
- › Battery construction engineering
- › Coke oven gas systems engineering
- › Charge car and door machine modifications and repairs
- › Complete design services for both wood and steel quench stations
- › Foundation/structural repairs and upgrades for support of nozzle decks, buckstays, collector mains, pinion walls, brick sheds
- › Designs for door repair/door tilting stations, pusher and coke alleyways and benches, reversing mechanism support systems
- › Numerous inspection reports and repair procedures throughout battery proper and by-products areas



Iron Making

- › Casthouse design
- › Pulverised coal injection system engineering
- › Stove rebuilds
- › Stockhouse design and automation
- › Dock to hi-line conveyor design
- › Ore bridge installation and maintenance engineering
- › Slag granulator and pelletizer design
- › Large diameter duct engineering
- › Downcomer replacement
- › Cooling water systems
- › Full control system design and commissioning



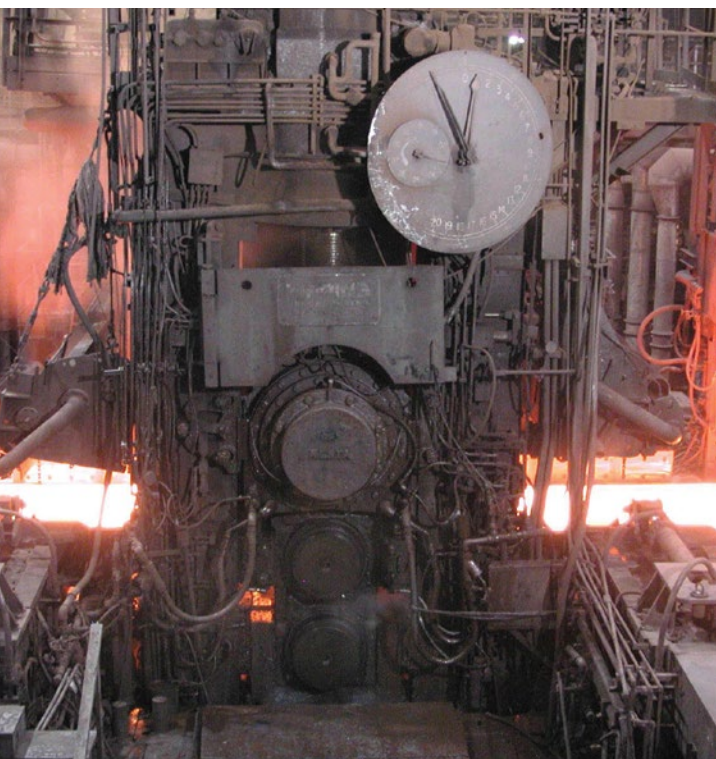
Steelmaking

- › Electric arc furnace (EAF) and basic oxygen furnace (BOF) multi-disciplinary construction engineering
- › Ladle metallurgy furnace (LMF) complete construction and installation engineering
- › Primary and secondary emission systems design
- › Cooling water systems design
- › Scrap handling systems design
- › Tundish and ladle repair facility design
- › Alloy additions systems design, controls, and commissioning
- › AutoTAP design, implementation, and commissioning
- › Vacuum degasser additions



Continuous Casting

- › Full construction engineering for caster installation
- › Mold modifications
- › Spray chamber repairs
- › Flume modifications and repairs
- › Segment repair area design
- › Runout table and flume repairs and modifications
- › Submerged entry nozzle manipulator
- › Mold level controls
- › Tundish and ladle maintenance and prep area design
- › Walking beam cooling bed modifications and repair



Hot Rolling

- › Reheat furnace construction engineering
- › Water systems design (descale, interstand cooling, roll cooling, runout table cooling)
- › Exit end coil handling studies and design
- › Cobble guard design
- › Hydraulic systems design
- › Slab handling and cooling bed construction engineering
- › Gauge installations and relocations
- › Downcoiler construction engineering
- › Crop shear optimization
- › Control system design and commissioning
- › Inspection and sampling construction engineering



Cold Rolling and Finishing

- › Coupled pickle line tandem cold mill detailed engineering
- › Installation of a new temper mill in an existing facility
- › Installation of a new continuous galvanizing line in an existing building
- › Engineering to couple an existing cold mill with a new pickle line
- › Complete electrical engineering for a new continuous annealing line
- › Addition of no touch loading systems on existing lines
- › Advanced high strength steel upgrades on four galvanizing lines and one continuous annealing line
- › New entry end on an existing coating (paint) line



Utilities

- › Acid regeneration facility detailed engineering
- › Hydrogen and nitrogen pressure reducing stations
- › Emergency power generation and distribution
- › Installation of two 8MW turbogenerators detailed engineering, control systems, and commissioning
- › Municipal wastewater monitoring systems detailed engineering
- › Acid loading, controls and commissioning, dilution and heating facility design, unloading
- › Coke plant wastewater controls engineering
- › Boilerhouse modifications and design
- › 230kV substation design
- › Complete electrical distribution systems design

CANADA HEADQUARTERS

176 Shaw Street
Hamilton, Ontario
Canada L8L 3P7
(905) 529-5122

USA HEADQUARTERS

103 Gamma Drive, Suite 160
Pittsburgh, Pennsylvania
15238, USA
(412) 963-1950

USA MIDWEST OFFICE

8585 Broadway, Suite 520
Merrillville, Indiana
46410, USA

EMAIL

info@jnegroup.com

 
@thejnegroup



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For more information, please visit JNEGroup.com.