



75 Scarsdale Road
Toronto, Ontario
M3B 2R2
Tel (416) 391-3755
Fax (416) 391-3645

MELT SHOP

PROJECT REFERENCE LIST

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ENGINEERING STUDIES:

- Engineering assessment of structural integrity of existing Casting Tower
- Basic Engineering for Reheat Furnace & Caster Upgrade.
- Preliminary engineering and budget estimate to upgrade and consolidate the Melt Shop capabilities including; elimination of one EAF and modification of second EAF to match current 2 furnace molten steel production; improved off-gas capture hoods to service the AOD and modify pollution control system to suit.
- Engineering & Project Management services for the fabrication of one new AOD vessel.
- Process throughput study to identify bottlenecks and low capital cost upgrade opportunities in Melt Shop and Cast-Roll process. Recommendation were classified as no-cost process improvements, low capital cost equipment modifications and capital improvements
- Basic Engineering for new closed-loop chemical treatment, filtration and heat exchange system for process water.
- Evaluation of process routing between Caster and Reheat Furnace including method of transportation and bloom cooling
- CFD Analysis of Tundish for Installation of New Tundish Furniture for Refractory Wear Reduction
- All process engineering, conceptual upgrade engineering, project budget and schedule for a complete melt shop layout for tube rounds incorporating used and new equipment.
- Feasibility study, preliminary engineering and capital budget estimate for Automated Scrap Delivery System to feed additional scrap into steel making process to increase heat size by 10 tons without increasing crane demand.
- Feasibility and basic engineering for pollution control and exhaust system modifications.
- Feasibility study, basic engineering and budget estimate to install new Vertical Ladle Preheater/saddle stand.
- Billet Building Crane Runway Analysis
- KOBM Shell Stiffener Investigation study, Design, Analysis, Engineering Services and Site support.
- Automatic Dross Scraper System Study and detailed engineering design.
- Detail engineering to upgrade Melt Shop Fume Extraction System including furnace roof canopy hood, new ducting to connect to existing system, new roof monitor over caster area and new louver panels for air intake.
- Basic engineering for casting building roof ventilation modifications.
- Detail engineering for spark box modifications.

- Engineering evaluation of existing ladle design with recommended improvements.
- Caster Bow Segment Modifications Engineering.
- Engineering Study for Cracks in DEC Duct
- Engineering Services for Casting Tower Repair including re-design of Caster Replacement Panels with a Concrete Deck per the Existing Deck Typical Detail
- Engineering analysis, design and detailing for New Ladle Hoods
- Basic Engineering study for Relocated Melt Shop
- Detail engineering to modify EAF tap alloy addition hoppers and chutes.
- Feasibility and basic engineering study to upgrade existing DEC booster fans.
- Steelwork modifications for LRS access platforms.
- Engineering design modifications to Melt Shop equipment.
- Basic engineering for the rehabilitation of existing Continuous Casting Machine tower.
- Engineering study to determine equipment requirements allowing for the expansion of production, including submerged pouring capabilities.
- Preliminary engineering and capital budget estimate for a multi-functional dual arm turret, independently articulated for tundish handling operations at the casting deck elevation.
- Preliminary engineering to determine feasibility of a semi-rigid dummy bar system which does not interfere with billet bay crane operations.
- Feasibility study including preparation of technical specifications and bid evaluation for the supply of new continuous caster equipment including; oscillators, withdrawal / straighteners, automated secondary cooling spray system, strand support and guidance system, torch approach table, billet run-out table.
- Basic engineering to enclose the spray chamber and upgrade the spray chamber exhaust system.
- Detail engineering to modify billet Cooling Bed rakes and ducking dog pusher system
- Detail engineering for machine cooling water system modifications to retrofit existing EAF with new Fuchs Systems roof.
- Feasibility study and capital budget preparation to install new four (4) strand SBQ continuous casting machine and associated modifications to affected Melt Shop process areas.
- Engineering Services for Tundish Transfer Car and Rotating Ladle Transfer Car
- Feasibility study and preliminary assessment probe to benchmark current Melt Shop operations including; equipment, equipment utilization, steel making practices, communication systems and productivity. Recommended solutions were proposed for both the short term (1 year) and mid term (5 years).

- Engineering feasibility study to investigate simultaneous charging and tapping.
- Design of Porter Bar for Caster Run Out Table Rolls.
- Civil Engineering Services for Bag house Layouts
- Basic Engineering for Caster Upgrade
- Preliminary engineering and budget estimate for pressure casting vessel and transfer equipment.

EQUIPMENT DESIGN & SUPPLY:

- Study to investigate upgrade of CAS-OB Snorkel lifting equipment. Detailed machine design and equipment supply (hoist, carriage & columns) of Snorkel Lifting Device.
- BOF Dart Insertion Equipment system design, supply, installation engineering, controls & automation.
- Baghouse for EAF, including all ducting and 500' duct support bridge with modifications to existing building, structures, foundation design and electrical design included.
 - Primary extraction, secondary extraction and ladle furnace duct.
 - Design and detailing of a monitor system within the roof space above the caster Cooling Bed including removal of part of the existing monitor and replacement with weather canopy.
- Complete design, technical documentation & commissioning of new air pollution control system for Electric Arc Furnace #2.
- Process engineering, thermal analysis and sizing of ducts.
- Civil engineering and equipment layout.
- Complete design, technical documentation, supply & commissioning of new air pollution control system for electric arc furnace including a 875,000 ACFM, negative pressure, reverse air baghouse
- Spare rotors for Baghouse's main exhaust fans.
- Design modification for added fan capacity and full utilization of available power of electric motors.
- Equipment supply and installation supervision.
- Fume Treatment Plant Upgrade for EEAF-150 #1-4 with concept development, supply of Technical documentation of Basic and Detail Engineering and Technological Instructions.

INSTALLATION ENGINEERING:

- Construction and Installation engineering services for Continuous Casting & Rolling Mill Modernisation Project.
- Engineering study, capital budget estimate and installation engineering to install new LMS booster fan and spark arrestor.
- Complete Civil (foundations & structures), Electrical & Utilities piping installation engineering for new melt shop including vacuum degasser and four strand caster.
- Design of structural upgrades for new pollution control system. New large ducts, roof modifications and structures included.

OPERATOR TRAINING

- Basic melt shop operations training (QMC 7) of all Melt Shop personnel for a Structural Steel Grade Melt Shop.
- Melt Shop Training Course for all operating crews for a Specialty Steel Melt Shop