R&H RAIL

OHTE INFRASTRUCTURE

Electrical

25kV AC AUTO-TENSIONED OHTE - MAJUBA RAIL ELECTRIFICATION PROJECT

HOLISTIC RAIL SOLUTIONS

At R&H, we understand that the OHTE infrastructure within the railway environment forms an integral part of the multidisciplinary rail solution.

Our approach is to ensure a cost efficient and appropriate result that meets client and engineering requirements at all times. We achieve this through combining client's needs, technical standards, engineering technology, logistic constraints and operational performance into a balanced integrated system.

This holistic approach requires diverse understanding of OHTE, Substations and P&L by our electrical design team to integrate with multidisciplinary teams throughout the project phases, ensuring that the optimum solution benefits the overall project infrastructure requirements and long-term operational benefits.

R&H Rail (Pty) Ltd
Established 1950
www.rhrailway.co.za

Electrical

OHTE INFRASTRUCTURE SERVICES

The scope of our OHTE infrastructure services extends from concept studies through feasibility phases to implementation design, construction management and project close-out. We offer support services to Project Management, Operational Planning, Technology Development, Maintenance Management and Training including:

- Analysis of existing railway OHTE systems (brownfields)
- Analysis of geographic conditions (greenfields)
- Feasibility analysis and costing
- Cost efficient solutions for expected asset life-cycles, purpose and conditions
- Designing infrastructure layouts in collaboration with other services
- Selection of appropriate technology
- Influence on or by Substations, P&L, Perway, Signalling & Telecommunications and Rail Operations
- Considerations of expandability
- Integration into other systems and assets
- System and project specifications and BoQ's
- Procurement processes and tendering
- Construction management
- Condition audits and reporting
- Maintenance management

OVERHEAD TRACK EQUIPMENT (OHTE)

OHTE systems and project specifications, analyses, auditing and design is undertaken based on the numerous and unique systems found in Africa and those used by Transnet, PRASA and the various independent infrastructure owners (Private Sidings).

- 3kV DC electrification systems
- 25kV AC electrification systems
- 50kV AC electrification systems
- Fixed and Spring tensioned OHTE systems
- Auto-tensioned OHTE systems
- Catenary and Trolley Wire design
- Capacity determination of electrification systems
- OHTE component applications and development
- "On the Fly" Voltage Change-over system
- Unique wiring applications
- Specialized structure configurations
- 6,6kV and 11kV Signal Power Supply transmission lines
- Power Supply step down points
- Remotely operated telecontrol systems
- Traction Return systems
- Traction power feeding configurations and arrangements
- OHTE wire profiling under bridges
- OHTE switching philosophies and configurations
- Maintenance condition auditing

RECENT PROJECTS

Recent projects where we have provided the above services either as part of the holistic multidisciplinary design effort or as a stand-alone service include:

- Umgeni - KwaMashu 3kV DC OHTE Rehabilitation, Durban Metrorail Region (2018-ongoing);
- Majuba Rail Project (3kV DC and 25kV AC OHTE) (2016-2019);
- Majuba Rail Project (3kV DC / 25kV AC "On-the-Fly Voltage change-over system (2016-2019);
- PRASA Durban Metro Resignalling Project (2013 to 2018);
- 3kV DC OHTE sidings at Bronkhorstspruit, Argent and Welgedag (2015 to 2019);
- Transnet Overvaal Tunnel FEL3 & FEL4 Study with Aurecon – 25kV AC OHTE (2016 to 2017);
- Exxaro – Grootegeluk Future 25kV AC OHTE (2016 to 2019);
- OHTE and Lighting Condition assessments for: Sishen KIO mine (50kV AC), Mamatwan, NPC, Implats, Beeshoek, Eskom Palmford line (3kV DC) (ongoing);
- Design of 3kV DC OHTE in new yard for Gibela train sets at Eerste Fabrieke (2017);
- OHTE Maintenance Management – Khumani Iron Ore mine 50kV AC & UMK Manganese Mine 3kV DC (ongoing);
- OHTE Alterations and wire profiling for bridges over rail at:
- Bekkersdal, Mamelodi, Rustenburg, Donkerhoek, Pienaarspoort, Klipspruit (ongoing);
- Ore Line 82.5Mtpa FEL2 (50kV AC) Study in association with Aurecon (2012 to 2013);
- Tweefontein coal loading siding (2010 to 2015); Glencore (previously Xstrata Coal SA)
- Dorstfontein coal loading siding 3kV DC (2009 to 2012); Total Coal SA
- Durban Metro Rehabilitation of Duffs Rd to Umgeni OHTE system 3kV DC (2010); PRASA

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