



SIGNALLING PROJECT



INFRASTRUCTURE SERVICES

At R&H we understand the importance of signalling as it allows the safe movement of trains at maximum permissible speed and minimum headway. Signalling can also be defined as the methodology of controlling train movements.

Our Signalling department strives to provide our clients with optimal signalling solutions that not only meets their operational and logistic requirements, but also complies with the country specific train operating philosophies, rules and specifications.

Our specialised team will provide appropriate solutions covering a wide variety of technologies, depending on the technical and operational requirements, ranging from dark territory train control systems to the latest communication-based train authorisation system solutions.

Our scope of Signalling Rail Infrastructure Services extends from concept studies through feasibility phases to project management, design, construction (monitoring), close-out (commissioning) and training.



These services include:

- Analyses of existing train control systems and operating procedures and processes
- Signalling asset condition assessments and reports
- Feasibility analyses and costing
- Operational incident investigations and route cause analyses
- Signalling failure investigations and analyses
- Procurement processes and tendering
- System and project specifications including Bill of Quantities
- Construction management
- Maintenance management
- Checking and approval of detail signalling drawings
- Testing and commissioning of signalling installations

These services are undertaken based on technologies for train control systems approved for use by Transnet and PRASA in South Africa, and also extend to other independent infrastructure owners locally and in the rest of Africa and beyond. These systems include but are not limited to:

DARK TERRITORY SOLUTIONS

- Radio Train Order (RTO)
- Track Warrant System (TWS)

COMMUNICATION BASED AUTHORISATION SYSTEMS

Full Signalling (3-Aspect and Multi-Aspect)

- Interlockings
 - Geographic
 - Legacy electro-mechanical
 - Hybrid
 - Electronic
- Remote control systems
- Low voltage power supply and distribution for signalling installations
- Track Vacancy Detection Systems
 - Track circuits
 - Axle counter systems

Other Systems

- Yard Control Techniques
- Level crossing protection
- Train condition monitoring systems e.g.
 - Weigh In Motion Bridges / Scales
 - Hot Box / Bearing Detector
 - Dragging Equipment Detector
 - Ultrasonic Broken Rail Detector (UBRD)

RECENT PROJECTS

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

- Study for the improvement of train services at Pretoria station (2009-2010); PRASA
- Upgrade of various level crossing protection systems in the Durban area (2009 to 2012); PRASA
- Nacala Corridor FEL3 in association with Aurecon (2010); Vale Mozambique Limitada
- Dorstfontein Coal loading siding (2009 to 2012); Total Coal SA
- Unit Cost Model Development (2012); Transnet Group Planning
- Ore Line 82.5Mtpa FEL2 Study in association with Aurecon (2012 to 2013); Transnet Capital Projects
- Glosam private siding (2011 - 2013); PMG Mining
- Tweefontein coal loading siding (2013 - 2015); Xstrata Coal SA
- Durban Metro Resignalling Project (2013 - 2018); PRASA
- Mayoko Iron Ore Export Project (2012 - 2014); Exxaro
- Majuba Rail Project (2016 – 2019)
- Transnet Overvaal Tunnel FEL3 & FEL4 Study with Aurecon (2016 to 2017);
- Signalling Condition assessments for: Sishen KIO mine (ongoing);
- RSR Board of Inquiry into the rear-end collision at Denver station – (2015)
- RSR Board of Inquiry into the rear-end collision at Booysens station – (2015 – 2016)
- Gauteng Metro Re-signalling Project for PRASA (2015 – 2016)