



Dr. R. G. PAXTON

Full Name Richard George Paxton

Qualification

BSc (Birmingham) Chemical Engineering Science
MSc (by exam) (Birmingham) Chemical Engineering Science
PhD (Birmingham) Chemical Engineering
AMIChemE

Nationality British

Year of Birth 1946



Professional Experience

1983 – Present Professional Consultant

Richard Paxton is the Founder of *RPA*. He provides the technical leadership and takes an overview role in all current projects. Richard's expertise lies in the design and adaptation of treatment facilities for industrial wastes and effluents and he has acquired a widely respected reputation for developing innovative solutions to previously inadequately addressed problems. This has been achieved through careful and thorough assessment and understanding of the processes and scientific principles involved. Richard's previous roles have provided him with extensive experience in both a design and an operations capacity. He is therefore able to approach any problem with a combination of experience, lateral thinking and innovation whilst at the same time taking a balanced view regarding any proposed solution.

Selected Projects:

- Took the technical lead in the evolution of an holistic strategy by which a circa 4000 hectare South African iron and steel production, rolling and finishing site could become a zero effluent producing facility and in the conversion of that strategy into a set of detailed tender specifications, all of which have been implemented and are performing properly.
- During this project, developed and implemented a series of interim measures which addressed the more urgent issues in a manner which was consistent with the evolving long term strategy. These included
 - Rearrangement of the pipework, the operating concepts and the controls for the on-site treatment facility for the more concentrated process effluents. This greatly reduced the operating costs and all treatment quality criteria were brought into compliance.
 - Introduced a series of carefully integrated containment and spillage/leakage prevention measures. All net process inputs and storm water overflows to the large on-site storage and evaporation lakes were thereby stopped, arguably the most environmentally sensitive lake was emptied and the inventory in the remainder is reducing rapidly.
 - Using adaptations to existing infrastructure and pipework, a scheme was successfully implemented whereby weaker (but none the less environmentally sensitive) inorganic discharges were directed to other site uses, thereby simplifying and greatly reducing the overall site effluent treatment requirements and reducing the raw water needs of the site.
 - A second similar strategy was developed whereby the production of organically contaminated effluents was more than halved and then the remainder used, without additional treatment, for other site uses as a replacement for raw water. This scheme has removed the need for at source biological effluent treatment of these effluents.
- Evolved a strategy for the re-arrangement of the cooling water treatment and recycling arrangements at another steel production and rolling facility by which significantly increased steel production could be accommodated without enlarging all the previous bottle neck areas and whilst greatly reducing corrosion and water treatment costs throughout the continuous casting and rolling areas.

- Developed and pilot tested a wet scrubbing process by which sub micron dust particles are removed at high efficiency from off-gases. This technology has been scaled up to a 60Nm³/s demonstration scale unit operating on an existing production facility.
- Resolved equipment blockage and non-effectiveness problems on dust removal scrubbers at a number of dolomite roasting kilns. Also developed a holistic strategy for the overall site whereby the handling of dirty surface water run off and waters from wash down, etc. could be integrated with the water and solids handling systems associated with the scrubbers.
- Detailed design of the Treatment Plant for tanker delivered liquid and slurry wastes, Newport S. Wales and provided expert witness evidence at their successful Planning and Licence Appeals.
- Developed and oversaw the implementation of phases 1 and 2 of the BPEO for the management of all liquid and solid residues including leachates from existing landfill deposits at the Columbus Stainless Steel Production Facility, South Africa. As a result, what is the world's largest integrated production facility for ferrochrome and stainless steel became a zero effluent facility.
- Designed treatment facilities for leachates and for dusts and odours for two of the strategic waste transfer facilities in Hong Kong.
- Design and development of treatment systems for methanogenic landfill leachates from a number of closed Hong Kong landfills and for the very large WENT landfill.
- Detailed design, construction management and ongoing technical support at five treatment centres for tankered liquid and slurry wastes.
- Developed, tested and technically assessed on a number of hazardous waste solidification techniques where the emphasis was on long term physical stability and long term resistance to leaching/leachate production. This included the design of suitable plant and equipment for the implementation of these techniques. This work included residues from:-
 - the production of metallic manganese and ferrochrome from their ores,
 - the production of numerous types of carbon and stainless steels, including furnace and kiln dusts with high levels of cadmium, chromium, manganese, lead and zinc,
 - miscellaneous effluent treatment operations and former lagoon deposits
- Specification and design of blending plant to produce a stable waste derived fuel from waste solvents and other petrochemical plant and similar residues.
- Specification and design of kiln feeding facilities to enable this and other types of blended fuels to be received, stored and burnt safely in cement kilns.
- Assembly and market interpretation of waste arisings and disposal statistics, particularly for hazardous wastes.

1979-82 J.M Whelan Ltd - Technical and General Manager

Carried out the process and detailed design of a treatment plant for 150,000 tonnes per annum of tanker delivered hazardous industrial liquid and slurry wastes, oversaw its procurement, construction and commissioning and then managed its operation.

1978-79 Pollution Prevention Consultants Ltd - Chief Chemical Engineer

Completed the detailed design of a treatment facility for tanker delivered acid wastes, and provided economic and technical reviews, assessments and solutions for a number of industrial waste problems.

1974-78 West Midlands County Council, Waste Disposal Dept.

Principal pollution control officer and team leader responsible for the introduction, control and enforcement of legislation regarding the disposal of industrial, commercial and hazardous wastes.

1972-74 Courtaulds Ltd

Project Engineer involved in technical support, loss prevention and de-bottle - necking of petrochemical and man-made fibre production facilities.