

# Sumetzberger tube-mail system for hospital

**BATEMAN has installed a Sumetzberger tube-mail system at the Inkosi Albert Luthuli Central Hospital in Durban, RSA. The system transports objects inside capsule carriers which move pneumatically through tubing.**

**B**ecause deliveries of small items can be done automatically, the medical staff can spend more time with patients instead of running errands. Deliveries are also far more rapid and reliable. For example, a capsule moves at an average speed of 6 m/s along a tube. This means that it will take only 38 seconds to complete the trip down the longest single tube (230 m) in the system.

Several other benefits accrue from its installation. In designing the hospital it was possible to save space by centralising the laboratories and decentralising the medicine stores. It was also possible to plan for minimised ward stocks and reduced inventory of consumable goods.

The special needs of the hospital are taken into account. The safe transport of fragile samples (including blood) is guaranteed and loads can be sent with restricted access. The capsules can be adapted to carry medical vials because they can be thermochemically sterilised and the whole system hermetically sealed. Computerised control enables itemised billing and cost analysis.

The system effectively interconnects all sections of the hospital which comprises four main buildings situated along the edges of a quadrangle. A laboratory building adjoins the complex. The system's central interchange located on the fifth floor of one of the buildings is one of the biggest of its kind in the world. From here ten lines of 160 mm diameter tube totalling 4 500 m in length spread to 79 stations in the hospital's reception areas, wards, operating theatres, X-ray and other specialist centres, centralised dispensary, laboratories and accounts department.

Almost anything that can fit into the capsules, which have an interior diameter of 115 mm and length of 330 mm, can be transported by the

system. This includes pharmaceuticals, blood and pathological samples, units of stored blood, instruments, laboratory and emergency samples, patient records, reports and X-rays, invoices and payments.

BATEMAN engineers liaised closely with Sumetzberger personnel in designing the system. Efficiency was maximized by balancing the number of high- and low-capacity stations on each line. The stations, diverters and computerised control system were imported and the tubes and fixings were sourced locally. Murray & Roberts Construction KwaZulu-Natal (Pty) Ltd was the main contractor and the mechanical consulting engineer was Delen and Oudkerk cc. The whole project took 33 months to complete. The system was commissioned in April 2000 and is working to specification.

**M**ore information may be obtained from Paul van de Vyver, Manager Pneumatic Conveying and Environmental, on +27-11-345-5000 or email paulvv@batemanbmh.co.za.



*A charge station at a nurse's desk in one of the wards.*

*The central interchange system where the ten main lines of the tube-mail system pass through several banks of diverters.*

*The blowers providing the pneumatic power can be seen in the lower front and left of the picture.*



*The Inkosi Albert Luthuli Central Hospital fitted with a tube-mail communications system.*