SHJ MEDICAL GAS SPECIALISTS
DELIVERING LEADING INNOVATIONS

GIG CYMRU NHS WALES
Bwrdd Iechyd Prifysgol
Betsi Cadwaladr
University Health Board

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CASE STUDY: INSTALLATION OF A MEDICAL GAS ALARM SYSTEM

Wrexham Maelor Hospital, Wales

Wrexham Maelor is the district general hospital for the north east region of Wales and is managed by the Betsi Cadwaladr University Health Board. Part of the North Wales trauma network, it is the second largest hospital in Wales.

Services provided include:

- 24-hour A&E
- General surgery
- Maternity services
- Special Care Baby Unit
- Acute Cardiac Unit
- Intensive care
- Minor Injury Unit
- Mental Health Unit
- Ophthalmology

The Project

The Estates Department at Wrexham Maelor Hospital had established the need for a new medical gas alarm system, which was identified as being critical to patient care. The existing system was defunct and unable to be used as intended. Replacement parts were no longer available and the manufacturer was no longer supporting the installed product.

SHJ won the tender to strip out the old alarms and provide a completely new system, including alarm units, transmitters, cabling, containment and connection to existing plant control panels. The system would monitor all medical gas manifolds and plant, including the VIE and two operating theatres.

The Challenges

The sheer scope and scale of this project was a challenge for SHJ. Additional hurdles included a car park between the medical gas plant room and the main hospital building, which the team had to navigate.

Existing services had to be maintained at all times while the new system was being installed. All work within staff and publicly-accessible areas could only be completed outside normal hours. And since the project was being undertaken in a live hospital environment, we had to be mindful at all times of patient and staff welfare and keep noise, dust and fumes to an absolute minimum.

The Solution

A team of 4 SHJ engineers worked at Wrexham Maelor for 3 months to complete all the work required: the longest alarms project we have undertaken to date. One of the first jobs was supervising a sub-contractor to dig a trench through the car park to connect the plant room to the hospital building. 3km of cabling was required to complete the whole system. In a first for SHJ, we commissioned special blue cabling with the words “medical gas alarm” printed along its length to facilitate any future work on the network.

We fitted a total of 21 alarm panels to monitor medical air, medical vacuum, oxygen, Entonox and

Key Facts:

- Installation of a new 21-unit medical gas alarm system.
- 3 month project.
- Involved laying a piping and cabling trench between hospital buildings.
- Installation carried out in a “live” hospital environment.
- Work within public areas was completed out-of-hours.
- All plant covered by SHJ’s 5-year “no quibble” warranty.

nitrous oxide, choosing the high quality and reliable SDX-15 model from one of our well-established partners, Shire Controls. As usual, our work was fully compliant with the standards set out in HTM 02-01, and all SHJ-supplied plant is covered by our customer-friendly 5 year “no-quibble” warranty.

The new system was tested with equipment subject to a quality assurance procedure complying with BS EN ISO 10012 and included general electrical and alarm witness testing.

Once the new system was installed satisfactorily, the old one was completely decommissioned and stripped out.

The Benefits

Wrexham Maelor Hospital now has a modern medical gas alarm system, fit for providing optimum patient care in the 21st century. Work was completed with minimal disruption to staff and patients, and included the complete removal of the old, redundant system.

This long and involved project demonstrates SHJ’s commitment to working with our customers to meet all aspects of their medical gas service needs