

## Combined Maintenance and Asset Management Assessment

**Integrated Health Care Facility****Situation**

A major hospital formed by merger of two smaller hospitals on adjacent sites has three generations of buildings dating from the 1960's, 90's and early 2000's. Within those are two heating and refrigeration plants, different construction methods and techniques, and legacy insulation problems (installed asbestos in one of the buildings).

Dedicated to patient care, the hospital had been putting all its money into direct patient care activities. Unfortunately building infrastructure and systems

tended to be ignored and had been deteriorating. There were a host of problems: a major power failure occurred and back-up generators failed to perform, concrete had spalled in parking garages (one chunk nearly missed a visitor), a contractor had fallen through a corroded air inlet grating at street level, the flight deck heating piping failed with attendant release of antifreeze into storm sewers, and other incidents. This had made it abundantly evident that old practices were no longer sufficient. The hospital had a recent change of both CEO and CFO, and with fresh eyes they could clearly see something had to be done. We were engaged to review maintenance and asset management practices.

**Solution**

Our review was carried out using both our "Uptime" model of excellence in maintenance management, and the new international standard for Asset Management, ISO 55001. The assessment consisted of guided walk-about inspection tours of the facilities, interviews with staff in most departments and review of recent engineering studies and projects that were underway. Both maintenance and asset management were rated on scales of maturity to clearly show where both strengths and weaknesses existed.

The review revealed a dedicated staff stretched far too thin with day-to-day panic work struggling to keep up with degraded systems and facility conditions. The internal projects group and maintenance group did not coordinate efforts well. Disruptions to operations, particularly in the older building that had the asbestos, were at times significant and often greater than they needed to be had better coordination of activities been carried out.

Given the frequent disruptions, continual break downs, generally poor response times and lower quality resolution, both the medical and patient care staff had lost confidence in the facilities maintainers and projects groups. The external engineering studies revealed that the facility was neglecting the long term health of installed systems in preference to mending breakdowns. That is a situation we have found to

be common in both the private and public sectors and various industries. At the hospital, in some cases, that neglect had reached the point where wholesale replacement of major systems was needed. At the time of our visit a major electrical system upgrade was just being completed. Testing of the upgrades was full of nasty surprises. Single line drawings of systems were out of date and inaccurate. Switching off a panel in one area sometimes resulted in power going off in areas nowhere near where it had been expected. To avoid the potential catastrophe of shutting power to operating rooms while in use, very careful scheduling of upgrade testing had to be carried out. Each test was accompanied by hand drawn upgrades to wiring diagrams and labels in panels and breakers.

We observed a chaotic operation with what was then poor leadership (the facilities director was about to retire). Changes in organizational staffing and structure were recommended along with an array of physical activities. A major effort at cleaning up storage areas to eliminate hardware was required. Old materials, sometimes even unsafe for use in a hospital setting had been retained in what can best be described as hoarding on an institutional level. Inspections and restoration to some civil structure were called for given potential risks. Ultrasonic Inspection of aged piping systems that are likely to be close to the end of their useful life were needed. Later those proved to be a wise move as failure in one seriously eroded pipe could have caused a loss of heating during winter months. Repair would have required not only a long time, but likely evacuation of the building due to the cooling that would occur during the extended repair time. The maintenance and projects groups were restructured. There was a need for a major restoration of flooring and wall surfaces to restore the look of the facility from dull and drab to sparkling. A new maintenance management system that could service both facilities and bio-medical purposes was recommended along with changes in how maintenance processes are managed.

The changes began almost immediately and progressed over the next couple of years. Our involvement was extended to provide support to the newly appointed manager and help in keeping efforts on track.

## Results

Just a few weeks after the report was presented a number of the recommendations were implemented (mostly by in-house staff). Attitudes towards maintenance have improved dramatically, maintainers feel more motivated and clear about their roles as well as more valued. Shops and storage areas are dramatically cleaner. There is far less “junk” stored in hideaways throughout the facility and a number of projects are underway to correct the deteriorated areas.

Through use of predictive maintenance technologies, the facility will also be able to avoid extensive and expensive replacements of whole systems while keeping disruptions to operations to a minimum. The new and easy to use CMMS in the hands of a competent maintenance clerk is proving invaluable in keeping work organized, scheduled and done on time.

## To learn more

If you are considering Reliability Centered Maintenance, you will want to talk to us. We’ve been doing it since before our company was formed. In fact our principal has been doing it since the 1980’s – before the first books and standards were even written. We know what works and what doesn’t. There is more to RCM than meets the eye and we are happy to share out insights.

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