



HOSPITAL MOULD PROBLEMS

A RECENT ongoing CASE STUDY May 2013

During previous visits the main focus of the team was to fix the effects of mould, and the musty smell. Now there was a real understanding that there is no point to address the effects without first addressing the causes of the problems. So I am happy that our previous proposal was not accepted, even though it would have successfully removed the mould and musty smells.

The original proposal was for a two stage process, firstly all of the walls and furniture were to be cleaned with a foaming chlorinated cleaner, and secondly, powerful oxidizing agents were to be "fogged" in each room and open space. To clean all levels of the hospital would have been a major project involving several external teams of cleaners, and the use of some very expensive equipment. I am comfortable that this project would have achieved the desired result, but for how long as the cause of the problem had not been addressed and follow up work would have been required.

Technology - After the first proposal was rejected we went back to basics and found a technology which in many ways is more suitable for the local environment of Malaysia. The technology involves the use of essential oils which have both deodorizing and micro biological inhibition characteristics, it is relatively inexpensive, and does not require expensive equipment to disperse though the hospital.

The essential oils are infused into a gel and packed into user friendly packages. When opened the gel evaporates releasing the oils.

The main technology difference between the two proposal is that oxidizing biocides given suitable contact and contact time will achieve 99.99% effective kill of micro organisms. The essential oils will not give an effective kill, BUT they will inhibit the growth of the micro organisms, they will seep into the carpet and furniture coverings, and they will minimise the odour.

Cleaning - With the use of the oxidising biocides the load on the cleaning staff should have dropped dramatically as the biocide would do the work. The essential oils will still require the same amount of work as is being done now as the cleaning agents will be required to remove the micro organisms that the essential oils have inhibited the growth of but not killed.

There was a comment made at the meeting that it would be impossible for the cleaning staff to carry out the cleaning methods that I have suggested, being step 1 clean the biomass off the surfaces, followed by a spray foam of a chlorinated compound, followed by another physical cleaning step. And I agree that it would be impossible as part of the routine cleaning, which is why we proposed to put in several teams of external cleaners on a one off basis.

Site Survey - As I indicated, on my first visit I was looking at which technology would give what I thought would be the best result. I did not spend any time looking at the air conditioning/HVAC system. On this visit I looked at how best to administer the use of VGS 147, and that required me to look at the air handling system/s.

I only looked at levels 3 and 5 and was surprised to find that neither floor was part of a centralised HVAC system. At either end of each floor was a large traditional air conditioner pumping cooled air into the hall ways. Each room then has a split system air conditioner. If my observations are correct this explains why there is so much moisture in some of the rooms. A normal HVAC system recycles a reasonable amount of the conditioned air within a building (80-90%) would not be uncommon. At the Hospital the rooms closest to the air conditioning units would be 100% fresh air (no conditioned recycled air), and having just been cooled this air is over loaded with moisture which it can no longer hold as vapour. No wonder the paper in some of the rooms is saturated.

It is important that an air conditioning expert look at the air conditioning air balance as it is obviously out of balance with too much fresh moist air and not enough dry conditioned air.

I tried to find the air conditioning filters and could not. They must exist, so we need somebody to find them and let us know about the cleaning protocol. Can they also indentify how any moisture liberated within the air conditioning is put to drain as I could not find any drains? Can the fan speed be altered? It would be easy if we could balance the air flows by adjusting the fan speeds.

I also tried to locate an opening into the air handing system to place the blocks of VGS 147 but could not find any. The product can be located in areas of high air flow.

The smaller blocks of VGS 147 are ideally sized for the split system, just place them after the filters, in the return air flow, and remember if you can smell the product you are over dosing.

This is an ongoing project and is now up to the Hospital to make a decision on which approach they want to take. Our belief is that the VGS 147 blocks will provide the most cost effective solution along with their routine cleaning procedures.....will wait to see what action they take.