

# Controlling dust during the refurbishment and extension of occupied premises

## Construction Occupational Health case study COH15

This case study outlines how Oxford-based contractors Knowles & Son (Oxford) Ltd dealt with dust control on a project building a new teaching suite and making alterations to existing accommodation at Denman College, the Women's Institute (WI) residential college near Oxford.



Figure 1

### The problem

Residential training courses carried on throughout the project so the need for dust-free construction was vital to safeguard not only the construction workers, but also the WI members.

### The risks

Cutting and breaking out concrete generates high levels of respirable dust, which contains tiny particles called respirable crystalline silica (RCS). In normal lighting the dust cannot be seen as it is so fine.

All RCS is hazardous and can cause silicosis and other serious lung diseases such as chronic obstructive pulmonary disease or lung cancer leading to permanent disability or early death.

### The solution(s)

The contractors realised that to be effective the solutions needed to be:

- simple;
- easy to use; and
- not hinder the task.

Risk assessments identified the need to avoid creating dust. A combination of water suppression and dust extraction were used to control the risk.

Blocks and bricks were cut either with guillotines (block splitters) or by finding alternative ways of doing the job. This largely eliminated the use of cut-off saws.

Worker education was a key element to achieving this. Workers were told about the health risks and the solutions that were available.

Another key part of the process was the involvement of Speedy Hire who supplied the tools and equipment.

The particular intricacies of the site led to the area where the new extension joined the existing building being 'screened off'. This in itself helped restrict the spread of airborne dust into adjacent areas where food preparation took place.



Figure 2

At the point of breaking through into the old building water suppression could not be used due to the proximity of the main electrical circuit board. The hire company supplied a Dustcontrol 2800c dust extraction vacuum. The electric grinder used to cut through the brickwork was fitted with a source extraction guard.

The dust extraction vacuum was compact and ideal for the tight space that they were working in. Other workers in the area were unaffected by the dust.

### The benefits

The site manager was clear about the benefits. Health risks were reduced and in addition, the site was cleaner, happier and more productive as less time and money were spent on clearing up dust.

### Key points

Different problems require different solutions. In this project various dust control techniques were used:

- screening of the work area;
- block splitting;
- water suppression on tools;
- dust extraction on tools;
- everyone on site was involved with the solutions. This included both employees and subcontractors.

In summary, everyone was:

- informed and instructed;
- had the right kit; and
- used it.



Figure 3