

## Case study:

# Reducing dust exposure in Home Building

### Summary

Miller Homes has been working closely with the HSE on refining the available data in respect of dust exposure during the housebuilding process for Home Builder Federation (HBF) members. Our primary concern had been the impact of wood dust on joiners and the practical use of vacuum extract to reduce this.

However, whilst undertaking exposure surveys through HSL, we identified a 4 times greater exposure (than that to the joiners) occurred during 'cleaning up' in-between different trades entering an individual plot. This can be an activity that is repeated up to 8 times during the internal works.

### Problem statement

Impact of dust leading to potential respiratory problems as a result of cleaning up (brushing) after trades have completed their work

This started us on the journey of looking at how we could reduce the exposure of 'general dust' that would be of benefit to our labourers sweeping up and to the trades that followed, by given them a dust free working area.

We had no reported health concerns raised other than ... when we're sweeping up (labourer with dust mask) we need to clear the plot as anybody else could 'taste' the dust!



Figure 1: Traditional hand sweeping of new build plots

### Solution / what you did

We teamed up with Eugene Buchner from specialist manufacturer VTuf, to look at how we could implement vacuum cleaning as an alternative to brushing and fundamentally how we could deal with the power issues (no electricity present) during some of the cleaning operations.

In addition, we wanted to make sure we got 'buy in' from our workforce, as without this, although we could supply equipment that would benefit... they might not actually use it.

VTuf had a standard Type M vacuum which would give us adequate performance if mains power was available, however, we wanted to see whether we could configure a rechargeable battery version that could be used whatever the power availability.

We tried several variations of prototype vacuum models to give us a combination of power ratings and battery life with associated tools and hose lengths.

The challenge was getting the correct balance between portability (weight and size), battery duration, recharge time and sensible cost.

To this end, our most recent approach has been to revert to a 'standard M Class Vacuum' and supplement its use with a rechargeable power pack, mains or generator power.

### Key challenges faced

To help our business understand the issues connected to sweeping, we produced a short video (featuring our site management team and operatives) on the positives of replacing brushing with vacuuming and the benefits to those affected (i.e. other contractors). This has also been shown to Regional Management Teams, site management and operatives around the business.



Figure 2: Plot clean out using vacuum cleaner

### Outcomes and benefits

Using type M vacuum cleaning, we capture all dust generated and avoid the need for RPE (and all the issues that go with it including face fit testing, stubble and cost). This means we can have other workers in the plot at the same time and the overall cleanliness is dramatically improved.

### Measures of success

So far we are at the start of our implementation plan, with roll out demonstrations being planned in each business unit. Our first demonstration has resulted in the planned purchase for one vacuum unit on each site within the business and a trial of a power generation unit as an alternative when mains or generator power is not available.

### Lessons learnt

For those who participated in the demonstration, a very positive attitude to dust control and a desire to put best practice into operation is clear.

Our trials have demonstrated that there are no production losses during cleaning using a vacuum cleaner with other trades able to work in the plot whilst cleaning is ongoing.

The alternative of brush sweeping would have meant that no trades could enter a swept plot for between 90-120 minutes whilst the dust "settled" before they could access without RPE.

### Contact details

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