



Radon Reduction

17Apr2011

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Svensk: www.fahreenergy.co.uk/FAHReenergyRadonReduktionSVENSK.pdf

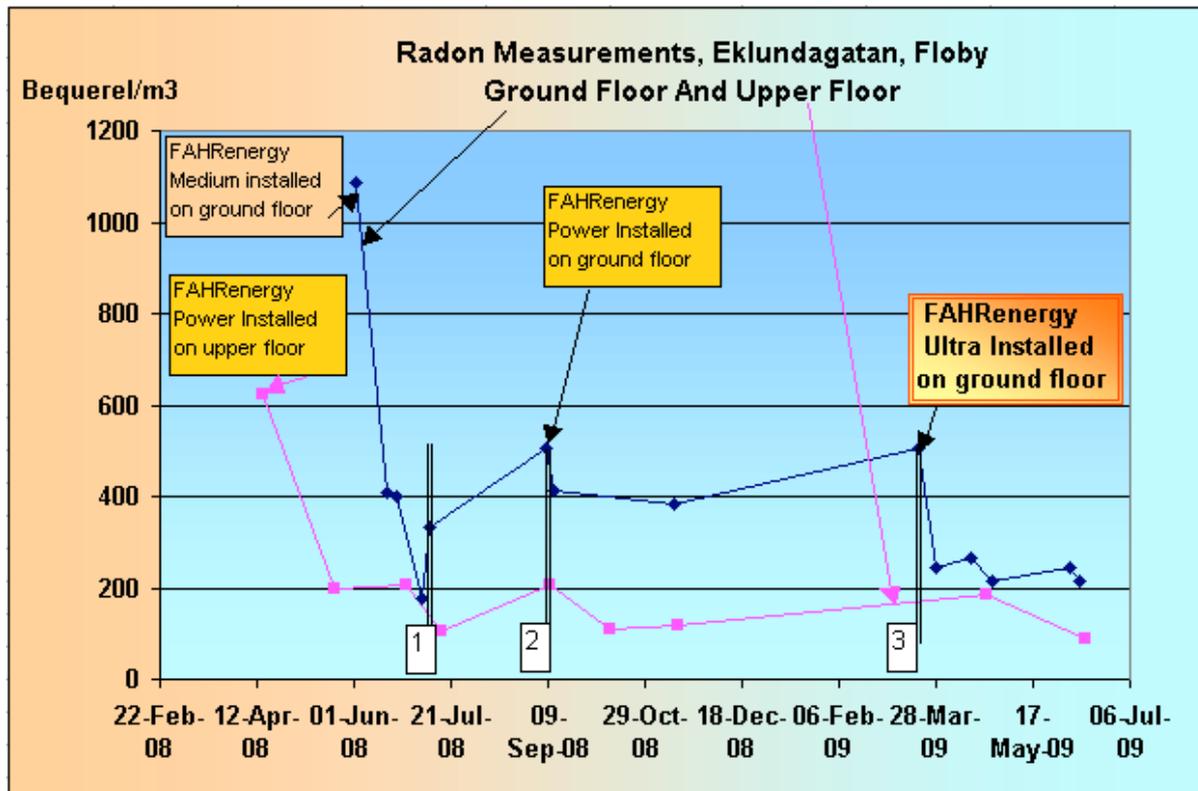
FAHReenergy Heat Recovery Ventilators do:

1. **Deliver fresh air preheated from the heat (energy) of the expelled old stale air**
 - Health of dwellers and house is improved at near zero power consumption
2. **Removes radon while delivering fresh air, recovering 2500kwh per year and reducing standard installation cost 2 to 4 times! Also saves 880kwh per year needed for a radon mitigation point**
 - By expelling the old air while blowing in the pre-heated fresh air, radon, dust and radon daughters are removed. This method is better than standard expensive radon reduction methods that only remove the radon gas, yet it is the radon daughters that are dangerous.

One Year Test

Below is a chart showing the results from more than one year of measurements and tests in our laboratory house in Sweden.

Each radon level is measured during a two days period using a certified electronic radon meter. Two days tests allow for measuring low and high radon levels.





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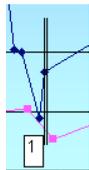
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The chart (Above 200 bequerel/m³ is unacceptable)

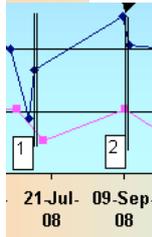
The Chart Explained:

1. The ground floor (blue curve) was reduced from 1100 to an average of 430 bequerel/m³ (the period between marker 1 and marker 2).



2. Around marker 1 the radon level at both ground and upper floor is at a minimum. This 'dip' in the external radon is due to natural changes in the amount of radon gas seeping up through the ground.

21-Jul-08



3. At marker 2 it was decided that a more powerful HRV was needed and FAHReenergy Power was installed. An immediate radon reduction of 100 is observed.

The radon limit

4. Between marker 1 and marker 2 an increase in radon is seen. This increase is reflected in the radon levels measured on the upper floor and must be attributed to natural radon fluctuations

5. Between marker 2 and marker 3 the radon level on both ground and upper floor is at first reduced and then increased. This is due to the natural fluctuations of radon.
6. At marker 3 the FAHReenergy Ultra (200m³ against 90m³ of air per hour for FAHReenergy Power) was installed.
7. The average radon level, at the ground floor, appears to have been reduced to the radon limit. Measurements during the next period will reveal the actual result.
8. The upper floor radon level was sufficiently reduced by FAHReenergy Power. The radon level was consistently below the radon limit.

FAHReenergy HRV versus Standard Radon Reduction

Standard Radon Reduction

Standard radon reduction is achieved by extracting the air between the house and the ground with a fan.

For a house having a cellar, the cellar floor is opened and one cubic metre (or more) of soil under the cellar is removed. The soil is replaced with gravel. A fan is connected and runs 24 hours a day. For this to be effective quite some power is needed and the fan should be placed in the middle of the cellar. Often more fans are needed. All cracks in the cellar have to be fixed.

The price for a standard house ranges from £2000 to £6000.

The power consumed is typically between 55w and 150w equalling 480kwh to 1315kwh per year.



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FAHReenergy Radon Reduction

For a house having a cellar a FAHReenergy HRV is placed in the cellar. Two 10cm holes between the cellar and the ground floor are made for the fresh and stale air.

One existing cellar ventilation hole is used for fresh air entry just as it always was the case.

One existing cellar ventilation hole is used to expel the old stale air.

Now the large and consistent **balanced** air flow removes both the radon gas from the lower level of the house and dust with associated radon daughters.

Fresh, preheated air fills the house and the radon plus radon daughters are removed.

The installation cost is typically £1000 to £1400.

The running cost consists of 12w, 18w or 40w depending on floor area and radon. This amounts to 105kwh, 158kwh or 350kwh per year respectively. The power consumed by FAHReenergy HRV's is used to recover the heat from the old stale air. The heat recovered during a year is typically 20 times more than consumed.

The power recovered corresponds to around 2500kwh after deduction of the power used. No running costs but a win of 2500kwh!

Installation costs are reduced 2 to 4 times!!

**Fresh air!
Better health
for people and
house!
An added FREEBEE!!!**

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**FAHReenergy is by far the best
way to reduce radon gas and
radon daughters!!!!**