

## AIR VENTILATION IN BUILDINGS: THERE IS NO „WE CANNOT DO IT“!

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A rule for new buildings and for renovated buildings says: airing by means of opening a window requires an active participation of the residents ( airing a couple of times during a day ). If there is no active airing, the humidity in a dwelling increases: damages due to too high humidity and mould could be the result. Also, construction faults such as thermal bridges, cold external walls or insufficient heating may lead to the forming of mould. According to a representative study approximately 14.2% of the German dwellings are affected by mould and humidity damage; because of the negative effects regarding appearance, building fabric and health this cannot be accepted.

Permanent operating air ventilation systems have proved to reduce the risks significantly; moreover, the living comfort can be improved. From a juristic point of view the installation of air ventilation systems in addition to windows which can be opened seem to be a reasonable and necessary measure.

The most efficient air ventilation systems operate on the air conditioning principle: exhaust air is sucked off from the exhaust air rooms such as the kitchen, the bathroom and the toilet and utility room through a net of ducts. Fresh air is brought into the livingroom, children room, bedroom. Thus there is a permanent airing of the dwelling from the rooms into which air is sucked in via the corridors and the diningrooms to the exhaust air rooms without needing fresh air for these areas. This system achieves a high airing efficiency in a dwelling with a low air change .

Special air ventilation systems and ventilation systems with heat recovery by means of plate heat exchanger have proved of value; a good airtightness of the building is a must for the efficiency of mechanical ventilation. Both above mentioned systems can be used in detached houses, blocks of flats and industrial buildings.

The mentioned examples show us that mechanical ventilation systems are available in different options and can be generally used when renovating old buildings at low costs. The most important factors for being accepted by the user are factors such as low noise operation, no draft and low energy costs.

Equipment hygiene is a decisive factor for the durability; that is why an easy to maintain equipment has to be put into practice from the planning phase to the realization. The precondition for good and cost optimised solutions is that all problems have to be considered at an early stage and the solution has to be integrated in the renovation planning. Both planners and craftsmen have to know the technical expertise and have to put it into practice.