CATECAR INDUSTRIES SA

A SWISS PRIVATE COMPANY DEDICATED

TO BREATHABLE AIR DEPOLLUTION

CATECAIR™:

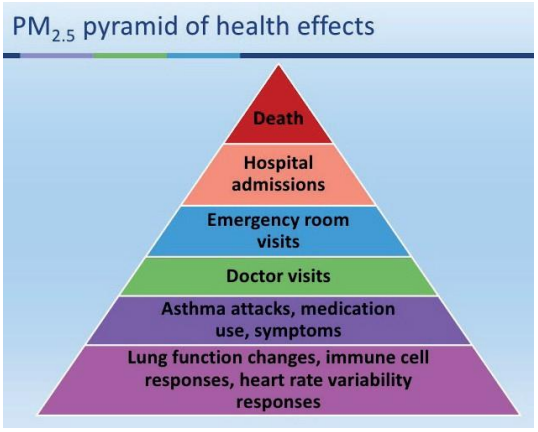
a concept for depolluting breathable air

(PM, NO2, Ozone, CO2 and viruses)

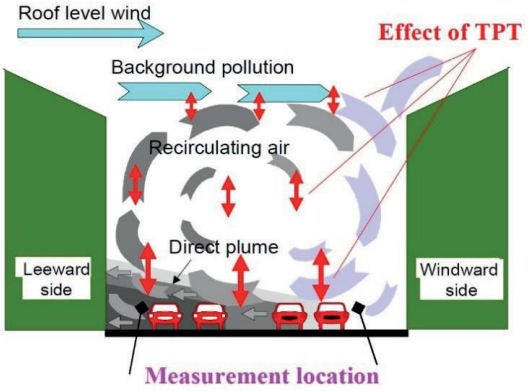
The breathable ambient air

TO-DAY BREATHING IS RISKIER THAN SMOKING

PM is a very serious *health problem* for people, especially young people, because very fine (PM2,5) and ultrafine (PM1) PM poisoned lungs and blood with devastating long term damage to health. They say that PM kill 9'000'000 people worldwide in 2018. The health cost for Europe is estimated at € 150 billion a year because 56% of cities flout air pollution regulation. The EU Commission is putting a hard pressure on eight State Members which are not taking the necessary measures against air pollution: France, Italy, Germany, Great-Britain, Spain, Hungary, Rumania, Czech Republic and Slovakia, i.e. in term of population, the large majority of Europeans !

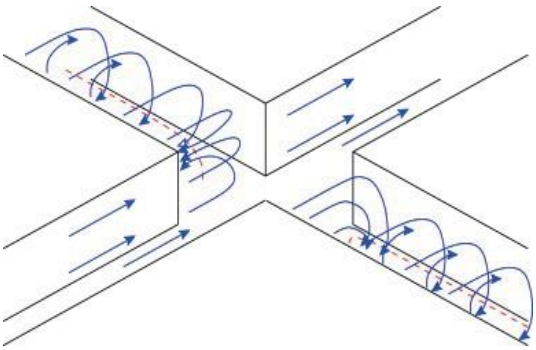


The level of PM is however much worse in low and middle revenues countries: 98 % of cities with more than 100'000 inhabitants do not meet the WHO recommendation. In other words: world population is more and more living in cities where PM pollution concentration is higher and higher. (http://maps. who.int/airpollution/)

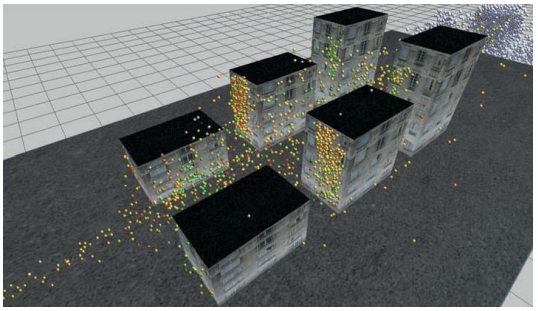


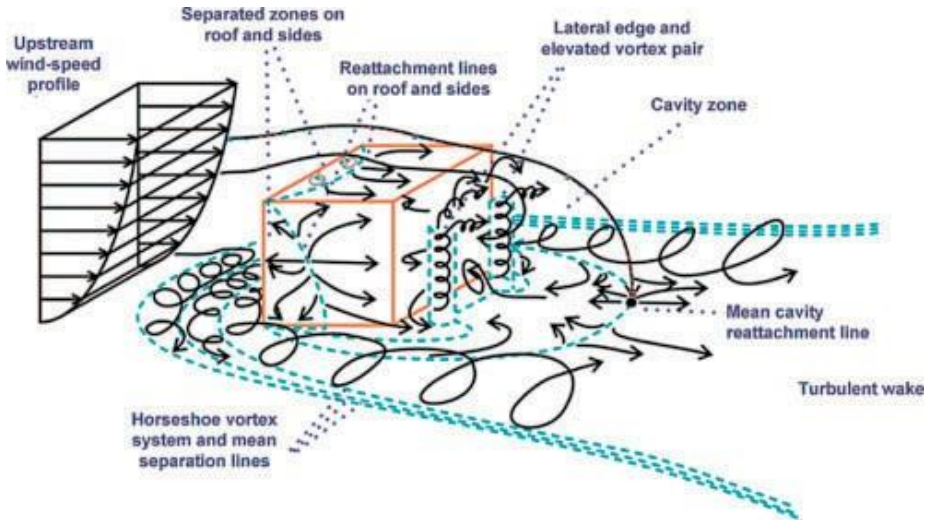
To-day urban pollution has specific sources (building and heating, traffic and industry) and general source (the air is polluted every-where).

The main source for PM2,5/1 however in urban areas is the car/truck traffic. One estimate the proportion of urban traffic between 45 and 80 % of the said pollution, depending on vehicles, traffic density, topo-graphical and weather conditions.



In a street, the air exchange is given by the roof level wind and street intersections which brings air and evacuates air. The air movement enters into streets and creates a 3-4 times circular movement retaining the traffic pollution down to the ground, mainly on the leeward side of the street. 95% to 67% of the pollution (depending on the ratio between the height of the building and the width of the street) is thus blocked into the street during a lenghtened time. It is this air flux rule that gives to Catecair™ the efficiency to absorb, at a rate of 300 m^3 per hour, 7200 m^3 a day, the PM 2,5 and 1.





Pollution remains down to the ground where we breathe, sometimes up-to seven days. This breathable air space has 3 m. high from the ground. It is there that depollution has to be organized. We have not to try to depollute air in general but to focus actions within the breathable air. Of course the regenerated breathable air will then be mixed with air over 3 m. But that depollution is not lost: first it is the maximum efficiency within the breathable space and then it betters air in general.

It is indeed at ground level first that pollution, climate warming and diseases *swirl, fall, combine to rise, having reinforced each other, in a viral cocktail which penetrates into our lungs, then into our blood, all the more easily as our mucous membranes irritated by pollution are permeable and our lungs mothed by particle matters 2,5 and 1, the most dangerous ones. This is what recent studies show both in the USA[1] and in France[2] .*

The immense people and economic costs of the COVID-19 demonstrates that breathable air is the problem no 1 of our world. We have to clean air pollution, should we wish to avoid new pandemics COVID-20, 21 and so on. Pollution and impact of pandemics are linked. The more pollution, the more deaths, as shown by the mentioned studies. It explains why North of Italy has had so many casualties. That highly industrial region has the top rate of PM in Europe.

The more pandemic health impact = the more confinement = the more destruction of men activities and wealth. Should this vicious circle be repeated with the possible COVID 2020, 2021 and so on and we will face the science fiction literature describing the destroyed world (*The Road*, 2006, Cormac McCarthy).

Catecar has conceived Catecair™ products of different kinds but all of them with the same goal : to clean breathable air, collectively or individually, on public or private space.

[1] https://projects.iq.harvard.edu/covid-pm

[2] https://www.lexpress.fr/actualite/sciences/la-pollution-aux-particules-fines-peut-elle-servir-de-vecteur-au-covid-19_2122753.html