PART 1
WHERE, WHEN,
HOW AND WHY

Stop the energy hog

**THERE ARE MILLIONS OF RESTAURANTS ON OUR PLANET.
MOST OF THEM ARE STILL ENERGY HOGS, LETTING OUT WARM AND ENERGY-RICH AIR.**

ozonetech.

a MELLIFIQ brand

RESTAURANTS AND COMMERCIAL KITCHENS

Almost all restaurants and commercial kitchens are energy hogs and discharge poorly purified air, without recycling the energy. Prerequisites for effective heat recovery are clean extract ducts and air handling units. Without these, a heat exchanger is more or less useless.

Grease is the cause of the problem. But grease can be neutralized with ozone, for example. Ozone decomposes fat into carbon dioxide, water and grease ash that can be easily transported through the ventilation system, without adhering to the extract and exhaust ducts. Ozone has been used for over 100 years in industrial purification processes for both air and water.

In today's world, ozone is a well-established, eco-friendly, cost-effective air treatment technology that is also used for commercial kitchen ventilation. Successful air treatment with subsequent heat recovery requires a combination of experience, the right technical solution and the correct specifications.

A GREASY PROBLEM

Grease in commercial kitchens and extract ducts creates several problems.

FIRE HAZARDS
Grease clogs the surface of the kitchen exhaust ducts and the ventilation units are a fire hazard given that grease is a fuel that can ignite during cooking.

BAD ODORS
Odors often cause issues with local residents. Ventilation ducts from restaurants and cafes that exit into courtyards often pose problems for property owners.

SWEEPING AND CLEANING COSTS
Air from frying pans and deep fat fryers that have been poorly cleaned require a continuous mechanical cleaning of the extract ducts. This results in major expenses, especially if the work must be done at night.

ENERGY CONSUMPTION AND MAINTENANCE
Grease in the extract ducts leads to equipment malfunction and affects the lifespan and efficiency of the heat exchanger and fans. Commercial kitchens consume a massive amount of energy. A very large proportion of this energy is lost through the kitchen ventilation.

OZONE CREATES OPPORTUNITIES

Grease and cooking odors are reduced with ozone and neutralized into water, carbon dioxide and a small amount of dust.

Ozone also has disinfectant properties that helps to remove odors. Cleaner air leads to fewer problems and creates opportunities for saving money and reducing expenses. Purifying and recovering energy from extract air is the single most important measure for saving energy in a property with a kitchen. Our experience shows that the return on investment is 1-2 years under normal conditions.

For the optimal treatment of kitchen extract air, a mechanical grease filter should be used to first separate particles, followed by a secondary polishing ozone treatment.

INCREASED FIRE SAFETY

Reduced grease deposits in the kitchen ventilation system also lowers the risk for chimney/grease duct fires. Greasy


Grease duct before ozone installation


Grease duct after ozone installation

Ozone eliminates grease and microorganisms rapidly, efficiently and without leaving behind any harmful by-products.

extract air makes the grease adhere and accumulate in the kitchen extract duct. If this grease catches fire, it is almost impossible to extinguish. A kitchen extract duct fire can jeopardize the entire building.

LOWER COSTS

Using an ozone-based automatic cleaning system in the ducts, makes it possible to select less expensive

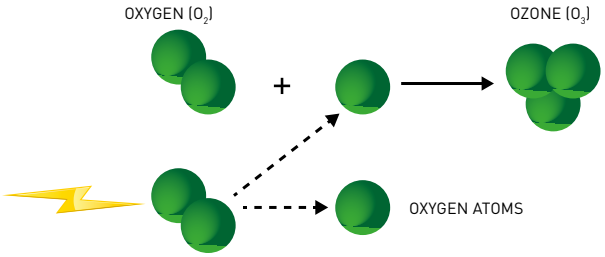
duct materials in many cases due to a lower risk for fire hazards. As a result of fewer grease deposits in the ventilation system, you can also lower your costs for cleaning ducts.

MINIMIZED ODORS

Cooking odors from restaurants are not always welcome and can lead to complaints from neighbors, tenants and nearby hotel guests. Ozone minimizes odors and thus any possible inconveniences in the surroundings.

HOW DOES IT WORK?

Ozone is a gas composed of three oxygen atoms. Ozone is unstable and decomposes naturally back into oxygen. Due to this, ozone must be produced on-site with an ozone generator. The amount of ozone produced is dependent on the available amount of oxygen, pressure and temperature. High purity oxygen from an oxygen generator, high pressure and a highly effective refrigerant, such as water, makes it possible to produce more ozone at higher concentrations. This is what we call "high performance" ozone systems.



To produce ozone you need energy and oxygen. Energy comes from electricity, while the oxygen is generated from the ambient air or from an oxygen generator.

This eco-friendly process is fully automatic, which means that it doesn't have to be "refilled" or maintained. This leads to a very low lifecycle cost (LCC).

HOW TO SUCCEED?

Achieving a successful air treatment process requires a combination of experience, the appropriate technical solution and an effective design.
A fully functional treatment system requires a sufficient amount of cleaning power (ozone) in your kitchen extract and a duct length that provides a reaction time of a minimum of three seconds.

WHAT IS UNDER THE HOOD?

Despite a modern and compact design with a brushed stainless steel housing, much of our strength lies beneath the surface. This strength includes a world-leading reliable technology, Swedish design and manufacturing, experienced staff and a comprehensive installation & service organization. These may not be obvious at a quick

Treating energy-rich air from the kitchen ventilation can recover energy through a heat exchanger. This technique also reduces odors and the risk for complaints from nearby residents.

glance, but these are the details that make our systems and our company one of a kind. We are confident that you will also experience these differences, if not today, surely in the years to come when using our efficient and reliable systems.

Who knows ozone treatment better than us? With over 20 years of experience and one of the widest product portfolios available, we are confident that we can assist you in selecting the right product for the right application.

FOR MORE TIPS AND A PRODUCT GUIDE – READ PART 2

About Mellifiq

Mellifiq is a multi-awarded environmental service company group, that has since the early nineties evolved into a world leading system and solution provider with multiple groundbreaking applications for industrial, municipal, and real estate clients. We supply cutting-edge technologies to manage the most sophisticated air, water, and energy challenges.

Mellifiq offers a complete range of air and water treatment technologies and solutions across multiple industries such as processing industry, energy sector, food and beverage, pharmaceutical, wastewater treatment and commercial real estate.

Mellifiq offers strong and renowned brands, such as Ozonetech, Nodora and Water Maid, and world-class engineering services combined an excellent track record of more than 40 years of innovation. We help our clients achieve the most efficient and sustainable solutions while creating the maximum value for their businesses.

With several business units across Europe, Mellifiq is headquartered in Stockholm where research and development, production, QA and certification all take place. Our unique technology and our extensive expertise have made us the Center of Excellence for the world's most complex projects, and a global player with installations on all six continents.

Everyday millions of people rely on our solutions for ventilation, disinfection, sanitation, and odor control. We are committed to raising the bar for the concept of clean and the industry standard for engineering, technical services and general contracting.

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